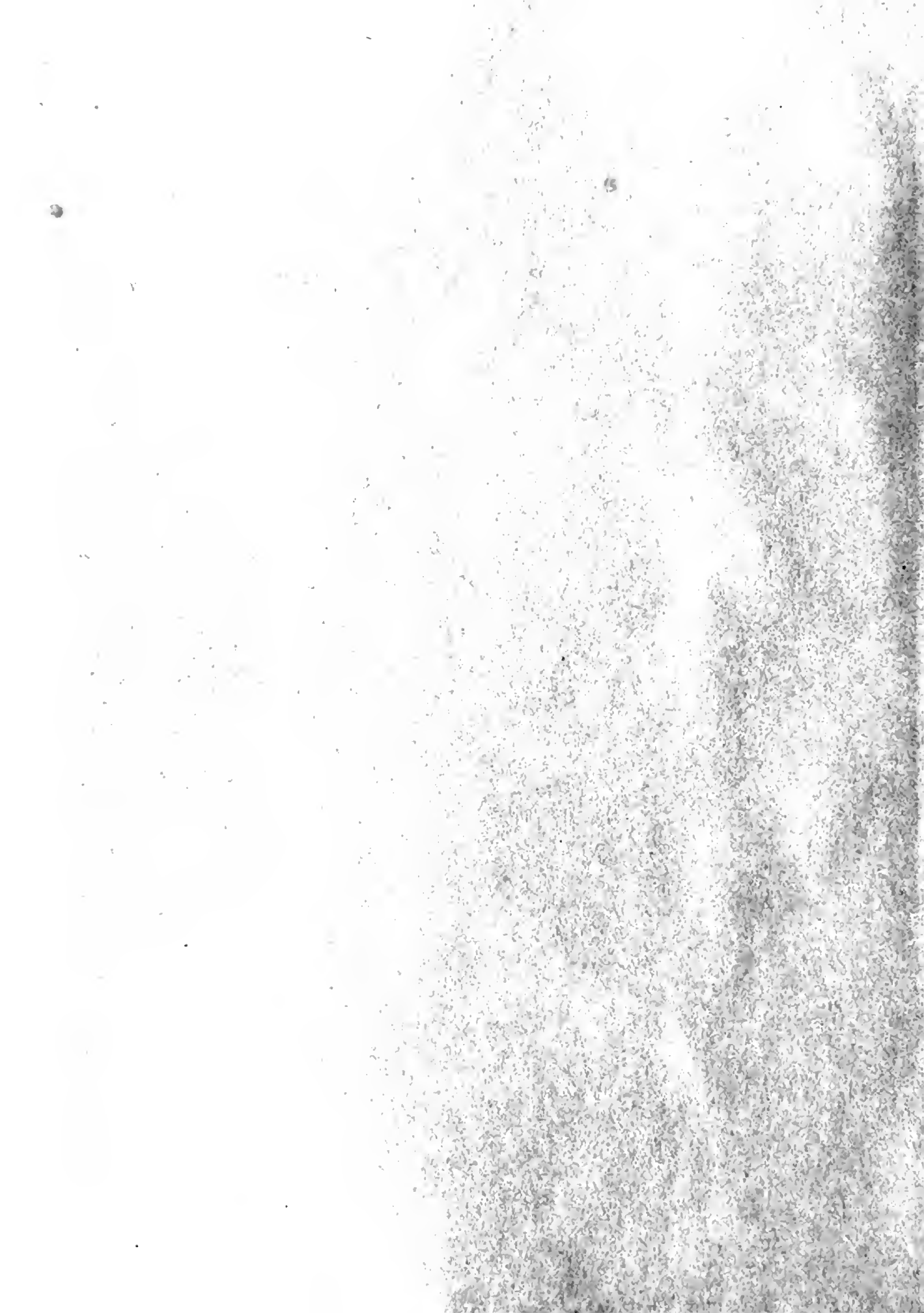


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BULLETIN No. 91-14

WATER WELLS AND SPRINGS IN BRISTOL, BROADWELL, CADIZ, DANBY, AND LAVIC VALLEYS AND VICINITY

SAN BERNARDINO AND RIVERSIDE COUNTIES CALIFORNIA

Prepared by
United States Department of Interior
Geological Survey

FEDERAL-STATE COOPERATIVE GROUNDWATER INVESTIGATIONS

AUGUST 1967

RONALD REAGAN
Governor
State of California

WILLIAM R. GIANELLI
Director
Department of Water Resources

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This report is one of a series, prepared by the U.S. Department of the Interior, Geological Survey, Water Resources Division, which presents basic data on wells and springs obtained from reconnaissance surveys of desert area. These investigations are made by the Geological Survey under a cooperative agreement whereby funds are furnished equally by the United States and the State of California. The reports in this Bulletin No. 91 series are being published by the Department of Water Resources in order to make sufficient copies available for use by all interested agencies and the public at large. Other reports of this series are:

- Bulletin No. 91-1: Data on Wells in the West Part of the Middle Mojave Valley Area, San Bernardino County, California
- 91-2: Data on Water Wells and Springs in the Yucca Valley-Twenty-nine Palms Area, San Bernardino and Riverside Counties, California
- 91-3: Data on Water Wells in the Eastern Part of the Middle Mojave Valley Area, San Bernardino County, California
- 91-4: Data on Water Wells in the Willow Springs, Gloster, and Chaffee Areas, Kern County, California
- 91-5: Data on Water Wells in the Dale Valley Area, San Bernardino and Riverside Counties, California
- 91-6: Data on Wells in the Edwards Air Force Base Area, California
- 91-7: Data on Water Wells and Springs in the Chuckwalla Valley Area, Riverside County, California
- 91-8: Data on Water Wells and Springs in the Rice and Vidal Valley Areas, Riverside and San Bernardino Counties, California
- 91-9: Data on Water Wells in Indian Wells Valley Area, Inyo, Kern, and San Bernardino Counties, California
- 91-10: Data on Wells and Springs in the Lower Mojave Valley Area, San Bernardino County, California
- 91-11: Data on Water Wells in the Western Part of the Antelope Valley Area, Los Angeles and Kern Counties, California
- 91-12: Data on Water Wells in the Eastern Part of the Antelope Valley Area, Los Angeles County, California
- 91-13: Water Wells and Springs in Soda, Silver, and Cronise Valleys, San Bernardino County, California



IN REPLY REFER TO:

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DEPARTMENT OF THE INTERIOR

GEOLOGICAL SURVEY
Water Resources Division
District Office
345 Middlefield Road
Menlo Park, California, 94025

June 1, 1967

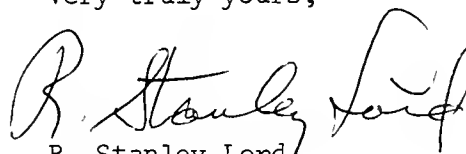
Mr. William R. Gianelli, Director
Department of Water Resources
State of California--Resources Agency
Post Office Box 388
Sacramento, California, 95802

Dear Mr. Gianelli:

We are pleased to transmit for publication by the Department of Water Resources the U.S. Geological Survey report, "Water Wells and Springs in Bristol, Broadwell, Cadiz, Danby, and Lavic Valleys and Vicinity, San Bernardino and Riverside Counties, California," by W. R. Moyle, Jr.

This report, one of a series for the Mojave Desert region, was prepared by the Garden Grove subdistrict office of the Geological Survey in accordance with the cooperative agreement between the State of California and the Geological Survey. It tabulates all available data on water wells and shows the reconnaissance geology with special reference to the water-yielding deposits.

Very truly yours,


R. Stanley Lord
District Chief

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WATER WELLS AND SPRINGS IN BRISTOL,
BROADWELL, CADIZ, DANBY, AND LAVIC VALLEYS AND VICINITY,
SAN BERNARDINO AND RIVERSIDE COUNTIES, CALIFORNIA

By W. R. Moyle, Jr.

PURPOSE AND SCOPE OF THE WORK AND REPORT

The data in this report were collected by the U.S. Geological Survey as a part of the investigation of water wells and springs and general hydrologic conditions throughout much of the desert region of southern California. The study was made in cooperation with the California Department of Water Resources.

The desert regions of California are characteristically regions of nearly barren mountain ranges and isolated hills surrounding broad valleys that are underlain by alluvial deposits derived from the mountains and hills. The valley areas generally contain ground water that has a wide range in chemical quality, but much of the water can be, and has been, developed for beneficial use.

The general objective of the cooperative investigation is to collect and tabulate all available hydrologic data for the individual desert basins in order to provide public agencies and the general public with data for planning water utilization and development work and for use in the overall ground-water investigation of the area.

Accordingly, the scope of the work includes: (1) A brief reconnaissance of major geologic features to determine the extent and general character of the deposits that contain the ground-water bodies; (2) a field examination of almost all water wells and springs in the area to determine their location with respect to the public-land net and to local geographic and cultural features; to record well depths and sizes, types and capacities of pumping equipment, uses of the water, and other pertinent information available at the well site; (3) measurement of the depth to the water surface below an established and described measuring point at or near the land surface; (4) selection of representative wells to be measured periodically to detect and record changes of water level; and (5) collection and tabulation of well records, including well logs, water-level measurements, chemical analyses, and pumping-test data.

The work has been done by the U.S. Geological Survey, under the general supervision of Walter Hofmann, district chief in charge of water-resources investigations in California, and under the immediate supervision of L. C. Dutcher, chief of the Garden Grove subdistrict office. The fieldwork was carried on intermittently between July and December 1964 from the Garden Grove subdistrict office of the Water Resources Division.

LOCATION AND GENERAL FEATURES OF THE AREA

As described in this report Bristol, Broadwell, Cadiz, Danby, and Lavic Valleys have an area of about 2,600 square miles, approximately between long $114^{\circ}50'$ and $116^{\circ}30'$ W. and lat $33^{\circ}55'$ and $34^{\circ}55''$ N. (fig. 1). The southeastern boundary of the area bisects the Turtle Mountains and corresponds to the northwestern boundary of the Rice and Vidal area of Giessner (1963b). The southern boundary is the northern boundary of the Chuckwalla area of Giessner (1963a) and the Joshua Tree National Monument boundary. The southwestern boundary corresponds to the Dale Valley area of Moyle (1961) and part of the Yucca Valley-Twenty-nine Palms area of Bader and Moyle (1960). The northwestern boundary corresponds to the southeastern edge of the Lower Mojave area of Dyer and others (1963). The northern boundary coincides with the southern boundary of the Soda Valley area of Moyle (1967). The northeastern boundary follows the drainage divide of the Bristol, Marble, Ship, and Old Woman Mountains.

Access to the area is provided by U.S. Highway 66, the Twenty-nine Palms Highway, and numerous unpaved roads.

Amboy, Ludlow, Cadiz, Chambless, Bagdad, and the Iron Mountain Pumping Plant are the principal towns in the area. Many small towns and railroad stations, now deserted, include Argos, Klondike, Siberia, Trojan, Haynes, Siam, Archer, Chubbuck, Milligan, Saltus, Sablon, Broadwell, Bolo, Ragtown, and Steadman.

The base maps (figs. 2, 3, 4, and 5) have been compiled from all or parts of U.S. Geological Survey topographic quadrangle maps, scale 1:62,500, as follows: Bagdad, Bristol Lake, Broadwell Lake, Cadiz, Cadiz Lake, Cadiz Valley, Dale Lake, Danby, Deadman Lake, Emerson Lake, Iron Mountains, Lavic, Lead Mountain, Ludlow, Midland, Milligan, Palen Mountains, Rice, and Turtle Mountains.

Geographically, the area is one of interior drainage and has no perennial streams. The principal landforms are broad alluvial fans extending into the basin from the surrounding mountains. The mountain areas are composed of granitic, metamorphic, sedimentary, and volcanic rocks which are of little importance with respect to yield of water to wells in these areas, except insofar as they underlie a large part of the catchment area of the watershed. The lower parts of the valleys are occupied by playa lakes which are usually dry, except during and for a short time after infrequent periods of heavy precipitation. Wells on some of the playa lakes produce brine from which commercial quantities of salt are obtained.

	Thickness (feet)	Depth (feet)
--	---------------------	-----------------

7N/6E-14P1. 6-inch hole 0-90 ft. No casing installed in hole.
Altitude about 1,890 ft.

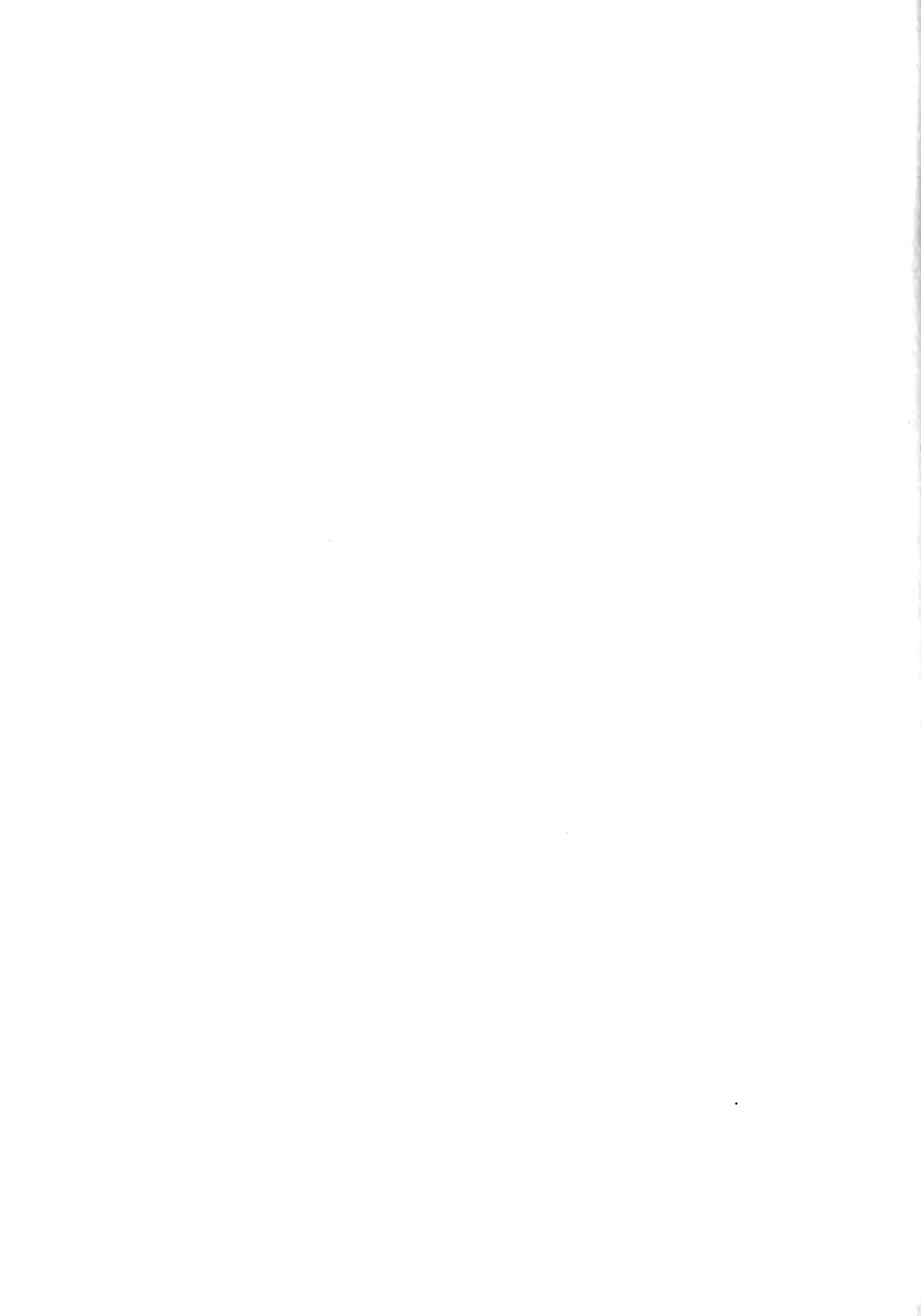
Clay, buff to brown; top 6 inches bedded, bottom quite loose -----	10	10
Lava, black and vesicular -----	3.8	13.8
"Caliche" -----	.2	14
Gravel, coarse; some sand; lava pebbles, red and black; particles, angular -----	6	20
Sand, silty, brown, composed of quartz and mica; with some lava, red and black -----	6	26
Sand and gravel with red and black vesicular lava pebbles, angular to subangular, .5 to 1 cm in diameter, some quartz and mica -----	42	68
Gravel, coarse; and boulders; with some silt and sand. Most large pieces are composed of red and black vesicular lava -----	7	75
No record -----	15	90

7N/8E-8B1. 12-inch casing 0-760 ft, 6-5/8-inch casing 760-1,600 ft, perforations unknown. Altitude about 1,788 ft.

Conglomerate -----	760	760
Sandstone -----	840	1,600

7N/9E-25Z1. 11-5/8-inch hole to unknown depth and 5-5/8-inch hole to 2,275 ft. No casing installed in hole. Altitude about 1,650 ft.

Clay and gravel -----	242	242
"Rock" -----	780	1,022
Shale -----	18	1,040
"Rock" -----	1,235	2,275



PREVIOUS WORK AND ACKNOWLEDGMENTS

Data on ground water in Bristol, Broadwell, Cadiz, Danby, and Lavic Valleys, contained in several U.S. Geological Survey water-supply papers, U.S. Geological Survey bulletins, and California Division of Mines publications, are included in the tables in this report, as is information supplied by the California Department of Water Resources, San Bernardino County Flood Control District, Southern Pacific Co., and Metropolitan Water District of Southern California.

The geology, shown in figures 2 to 5, was compiled and modified by W. R. Moyle, Jr., from unpublished mapping in the Broadwell Lake quadrangle by T. W. Dibblee, Jr., and A. M. Bassett; and from the Deadman Lake, Emerson, Lavic, and Ludlow quadrangles by T. W. Dibblee, Jr. The Bagdad and Cadiz quadrangles and parts of the Bristol Lake, Cadiz Lake, and the Milligan quadrangles were mapped by geologists of the Southern Pacific Co. (1964b). These geologists include R. Anctil, H. F. Bonham, Jr., J. T. Collier, James Cooksiey, Warren L. Coonrad, A. Cunningham, E. A. Danchy, James Gamble, Raymond T. Laird, Max Schafer, W. H. Spurck, and M. S. Trichler. Those parts of the Bristol Lake, Cadiz Lake, and Milligan quadrangles, not mapped by the Southern Pacific Co. geologists, were mapped by W. R. Moyle, Jr. The geology of the Cadiz Valley and Dale Lake quadrangles was mapped by D. H. Kupfer and A. M. Bassett (1962). The geology of the Lead Mountain, Iron Mountains, Turtle Mountains, and Rice quadrangle was mapped by W. R. Moyle, Jr.

The cooperation and assistance listed above are greatly appreciated, as is the assistance given by the many well owners, drillers, salt companies, railroad companies, and others who contributed materially to the completeness of the data presented in this report.

GEOLOGIC AND HYDROLOGIC FEATURES OF THE AREA

Geologic Units and Their Water-Bearing Character

The geologic formations in the Bristol, Broadwell, Cadiz, Danby, and Lavic Valleys are divided into two main groups, the consolidated rocks and the unconsolidated deposits. The formations within these groups have dissimilar water-bearing characteristics but, in general, the unconsolidated younger deposits of Quaternary age are more porous and permeable than the consolidated older rocks of pre-Tertiary and Tertiary age. The unconsolidated deposits generally underlie the valleys and contain most of the ground water stored in the area. The consolidated rocks form the mountains and hills, surround the valley area, underlie the unconsolidated deposits, and form the boundaries of the ground-water basin. The consolidated rocks, for all practical purposes, are impermeable, but are important because the mountains and hills receive the major part of the precipitation within the drainage area. It is the runoff from the mountains and hills that contributes most of the recharge to the ground-water body in the unconsolidated deposits. In the following paragraphs the geologic units, shown in figures 2 to 5, are described with special reference to their water-bearing characteristics.

The oldest formation in the area is the basement complex which consists of igneous and metamorphic rocks, undifferentiated, principally granite, schist, gneiss, limestone, and metavolcanic rocks, all of pre-Tertiary age. The basement complex is generally impermeable, except in fractured and weathered zones that yield small amounts of water.

Volcanic rocks of Tertiary age are composed of undifferentiated intrusive and extrusive basaltic, andesitic, and felsitic rocks. This unit in places is interbedded with the continental sedimentary deposits of Tertiary age. Locally wells penetrating this unit yield small amounts of poor-quality water.

Continental sedimentary rocks of Tertiary age consist of moderately to well bedded and gently to very steeply dipping beds of conglomerate, fanglomerate, sandstone, siltstone, water-laid tuff, and agglomerate. They yield little water to wells and springs. Locally the water from parts of this unit may be of poor quality.

Basalt of Tertiary or Quaternary age is an olivine basalt that is generally above the regional water table or beneath the alluvium. It is not considered to be a major aquifer.

Olivine basalt of Pleistocene and Recent age either overlies the older alluvium or rests directly upon the Tertiary or pre-Tertiary units. In all cases, the basalt is unconformable with the underlying material and is above the regional water table. It is not a major aquifer; however, some small springs issue from its base.

Older fan deposits, of Pleistocene age, are composed of gently tilted unconsolidated to moderately consolidated and moderately well bedded gravel, sand, silt and clay derived from the granitic and metamorphic rocks and, where saturated, yield water to wells.

Older alluvium, of Pleistocene age, underlies most of the valley floor and is overlain by a veneer of younger material. The older alluvium consists mainly of moderately well sorted gravel, sand, silt, and clay. It is generally unconsolidated, but in some places it is slightly cemented. This formation is porous and permeable, extends below the water table in most areas and, where saturated, yields water freely to wells. It is the principal water-bearing unit in the area.

Younger alluvium, of Recent age, consists of unconsolidated gravel, sand, silt, and clay beneath the alluvial plain. Deposition is presently taking place in the valley areas during times of infrequent precipitation. This unit is permeable and, where saturated, will yield water to wells. However, it is thin and generally lies above the water table. Although it transmits precipitation and water from the intermittent streams to the ground-water body, it is not an important water-bearing unit.

Younger fan deposits, of Recent age, consist of gravel derived from the local mountain areas. The deposits are generally poorly sorted. This unit, generally at the toe of a large mountain mass and above the regional water table, is not an important aquifer.

Playa deposits, of Recent age, are composed of clay with some sand, silt, and various amounts of soluble salts. Of the five major playas shown in figures 2 to 5, Bristol, Cadiz, and Danby Lakes are discharging playas, having water levels at or near land surface; Broadwell and Lavic Lakes are not discharging playas. The discharging playas allow water to evaporate into the air, leaving a heavy residue of salt behind. Many wells drilled in Bristol and Danby Lakes produce brine from which large quantities of commercial salt are obtained.

Windblown sand, of Recent age, is composed of actively drifting fine to medium sand, ranging from a few feet to more than 100 feet in thickness. The sand is generally above the regional water table, but in some places is saturated and yields some water of varying quality. Deposits surrounding Bristol Lake are composed of small dunes of drifting sand that overlie playa deposits.

Recharge and Discharge of Ground Water

Recharge to the ground-water body of the area occurs by direct infiltration of rain, subsurface flow from the adjoining basins, and percolation of infrequent runoff during flash floods in the surrounding mountain areas. Rainfall in the Ludlow area averages about 2 inches annually. For the period of record, however, in the surrounding mountain areas it may be much higher. Water-level measurements made between 1910 and 1965 indicate that no significant decline has occurred in the area for the period of record.

The sparse amount of data available indicates that ground water in the Ludlow-Broadwell area probably flows southeast toward Bristol Lake where it evaporates. Ground water in Fenner Valley, which is north of the report area (fig. 1), probably flows southeast into Bristol Valley through an alluvial gap south of the old railroad station at Siam; this ground water then moves toward Bristol and Cadiz Lakes where it also evaporates in the area where the water table is approximately at land surface.

WELL-NUMBERING SYSTEM

The well-numbering system used in the Bristol, Broadwell, Cadiz, Danby, and Lavic Valleys has been used by the Geological Survey in California since 1940. The system has been adopted by the California Department of Water Resources and by the California Water Quality Control Board for use throughout the State.

Wells are assigned numbers according to their location in the rectangular system for the subdivision of public land. For example, in the number 1S/17E-34R1, the part of the number preceding the slash indicates the township (T. 1 S.), the part between the slash and the hyphen is the range (R. 17 E.), the number between the hyphen and the letter indicates the section (sec. 34), and the letter indicates the 40-acre subdivision of the section, as shown in the accompanying diagram.

D	C	B	A
E	F	G	H
M	L	K	J
N	P	Q	R

Within the 40-acre tract the wells are numbered serially, as indicated by the final digit. Thus, well 1S/17E-34R1 is the first well to be listed in the SE¹/₄SE¹/₄, sec. 34, San Bernardino base line and meridian.

The letter X, substituted for the letter designating the 40-acre tract, indicates the well was located in the field and is accurately plotted with respect to its position to cultural features, but at the time of location the public-land net was too poor to warrant assigning a more accurate location number. Since such wells were located, a better land net has been obtained.

The letter Z, substituted for the letter designating the 40-acre tract, indicates the well was plotted from unverified descriptions; the described locations of such wells were visited, but no evidence of a well could be found.

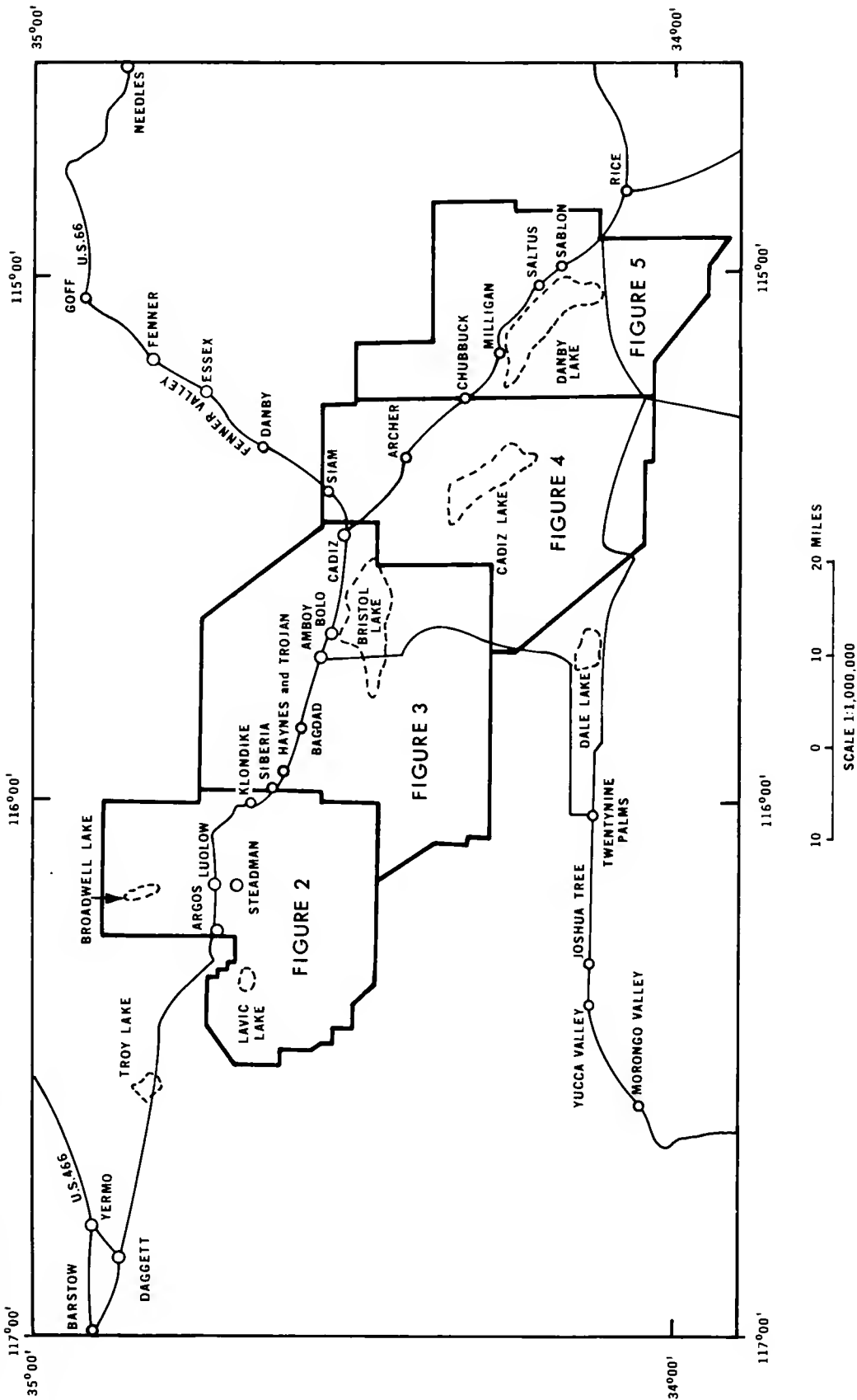
There are a few exceptions to this system of numbering wells according to their position in the 40-acre subdivision of the section. These are wells which, usually having long periods of record, were assigned numbers based on earlier, less accurate maps. During this investigation, these wells have been plotted at the correct location on the map, but the old number has been retained to facilitate use of the older records for the well.

The numbering of springs in this report is the same as for wells except that an S is used between the 40-acre subdivision letter and the final digit as shown in the following spring number: 3N/17E-10JS1.

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MAP OF PART OF SOUTHERN CALIFORNIA SHOWING AREAS DESCRIBED IN THIS REPORT

APPENDIX A

TABLE 1. DESCRIPTION OF WELLS AND SPRINGS IN BRISTOL,
BROADWELL, CADIZ, DANBY, AND LAVIC VALLEYS,
SAN BERNARDINO AND RIVERSIDE COUNTIES, CALIFORNIA

Table 1.--Description of wells and springs in Bristol, Broadwell, Cadiz, Danby, and Lavic Valleys,

San Bernardino and Riverside Counties, California

State well and spring number: The number given is the U.S. Geological Survey number assigned to the well or spring according to the method described in the sections on the well-numbering system and spring-numbering system.

Other numbers and source of data: The source of data on each line is indicated by the following symbols: B Bassett and others (1959); CDM Gale (1951); CG Charles Groat, University of Massachusetts; D driller; DGT Thompson (1929); DWR California Department of Water Resources; FC San Bernardino County Flood Control District; GS U.S. Geological Survey; M Mendenhall (1909); MWD Metropolitan Water District of Southern California, logs published in Ver Planck (1958); NHD Darton and others (1915); O owner; SM Storms (1892); SP Southern Pacific Co. data; W Waring (1915).

Date of observation: Data for each well are presented in reverse chronological order, with the most recent information summarized on the top line, opposite the well number. Where only the year is shown, no date was given in the source reference.

Owner or user: The owner or user of the well is listed along with the number he assigned to the well. Many of the owners' well numbers have duplicate numbers because groups of wells were numbered serially on several different drilling programs.

Year completed: The completion date was obtained from the driller's log, owner, or others.

Depth: Depths of wells, given in whole feet, were reported by owners, drillers, or others; depths given in feet and tenths of a foot were measured below land-surface datum by the Geological Survey.

Type and diameter: The type of well construction is indicated by the following symbols: A auger;

C cable tool; D dug by hand or clamshell; R rotary. The number following the letter is the diameter of the casing, in inches. For uncased test holes, the number is the diameter of the hole, in inches. For an unsymmetrical, dug well, only the maximum dimension is given. N indicates no casing.

Type of pump and power: The type of pump is indicated by the letter symbols: C centrifugal;

J jet; L lift; N none; S submersible; Si siphon; T turbine. The type of power is indicated as follows: A air compressor; D diesel; E electric motor of undetermined horsepower (a number in this column indicates the rated horsepower of an electric motor); G gasoline engine; Gr gravity; H hand; N none; and W wind.

Use: The use of the well is indicated by the following symbols: Dm domestic; Ds destroyed or dry; In industrial; Ps public supply; RR railroad; T test hole, not cased; and Un unused.

Measuring point: The point from which water-level measurements are made by the Geological Survey is described as follows: Bhc bottom of hole in casing; Hpb hole in pump base; Lsd land-surface datum; Tap top of access pipe; Tc top of casing; and Tcc top of casing cover. All Geological Survey measurements are from the same measuring points unless otherwise indicated.

Altitude: The altitude given is the altitude, in feet above mean sea level, of the land-surface datum, the plane of reference, at the well. Altitudes, given to the nearest foot, were interpolated from Geological Survey topographic maps having 40- and 80-foot contour intervals. Altitudes given to the nearest tenth of a foot were determined by spirit leveling.

Water level: Measured depths to water are given in feet, tenths of a foot, and hundredths of a foot, or feet and tenths of a foot; reported or approximate depths to water are given in whole feet. All measurements are given from land-surface datum and have had the distance between the measuring point and land surface subtracted or added, depending on whether the measuring point is above or below land-surface datum. All water levels in wells are below land-surface datum.

Other data: C chemical analysis of water from wells is given in table 3; L driller's log of well is given in table 4; Lp published driller's log. See table 5; W water-level measurements for wells which have five or more measurements are listed in table 2.

State well number	Other numbers and source of data	Date of observation	Owner or user	Year completed	Depth of well (feet)	Type and diameter (inches)	Type of pump and power	Yield (gpm)	Use	Measuring point		Altitude of lsd (feet)	Water level below lsd (feet)	Other data
										Description	Distance above or below (-) lsd (feet)			
T. 1 S., R. 17 E.														
1/17-34R1	GS	10- 7-64	Moser Mill Site	1930	173.8	14	N N		Un	Tc	2.2	1,060	38.07	
T. 1 S., R. 18 E.														
1/18-321	GS N-215	10- 7-64	Desert Well						Ds			720		
13L1	GS MWD MWD	8-26-64 2- 2-33 2- 2-33	Metropolitan Water Dist., well 11	1932	43.0 558.5 v370	16	N N	260	Ds	Tc	0	827.5	(a) 220.5	C, L
24R1	GS	8-26-64	Metropolitan Water Dist., well 11A	1931		8	N N		Un	Tc	0	930	(b)	C
T. 1 N., R. 18 E.														
1/18-2C1	GS MWD	10- 7-64 1940	Metropolitan Water Dist., well 4	1940	0 57	A N 36	N N		Ds T			625		C, Lp
2E1	GS MWD	10- 7-64 1940	Metropolitan Water Dist., well 5	1940	0 41	A N 36	N N		Ds T			625		Lp
3B1	GS MWD	10- 7-64 1940	Metropolitan Water Dist., well 3	1940	0 41	A N 36	N N		Ds T			625		Lp
3E1	GS MWD	10- 7-64 1940	Metropolitan Water Dist., well 19	1940	0 21	A N 16	N N		Ds T			625		Lp
4A1	GS MWD	10- 7-64 1940	Metropolitan Water Dist., well 16	1940	0 18	A N 22	N N		Ds T			625		Lp
4A2	GS MWD	10- 7-64 1940	Metropolitan Water Dist., well 17	1940	0 36	A N 16	N N		Ds T			625		Lp
4B1	GS MWD	10- 7-64 1940	Metropolitan Water Dist., well 2	1940	0 60	A N 36	N N		Ds T			625		Lp
4B2	GS MWD	10- 7-64 1940	Metropolitan Water Dist., well 14	1940	0 41	A N 36	N N		Ds T			625		Lp
4B3	GS MWD	10- 7-64 1940	Metropolitan Water Dist., well 27	1940	0 21	A N 16	N N		Ds T			625		Lp
4C1	GS MWD	10- 7-64 1940	Metropolitan Water Dist., well 28	1940	0 21	A N 16	N N		Ds T			625		Lp

T. 1 N., R. 18 E.--Continued

State well number	Other numbers and source of data	Date of observation	Owner or user	Year completed	Depth of well (feet)	Type and diameter (inches)	Type of pump and power	Yield (gpm)	Use	Measuring point		Altitude of lsd (feet)	Water level below lsd (feet)	Other data
										Description	Distance above or below (-) lsd (feet)			
1/18-4D1	GS MWD	10-7-64 1940	Metropolitan Water Dist., well 1	1940	0 41	A N 36	N N		Ds T		625		C,Lp	
4D2	GS MWD	10-7-64 1940	Metropolitan Water Dist., well 29	1940	0 14	A N 16	N N		Ds T		625		Lp	
4D3	GS MWD	10-7-64 1940	Metropolitan Water Dist., well 30	1940	0 21	A N 16	N N		Ds T		625		Lp	
4F1	GS MWD	10-7-64 1940	Metropolitan Water Dist., well 24	1940	0 21	A N 16	N N		Ds T		625		Lp	
4F2	GS MWD	10-7-64 1940	Metropolitan Water Dist., well 26	1940	0 21	A N 24	N N		Ds T		625		Lp	
4G1	GS MWD	10-7-64 1940	Metropolitan Water Dist., well 21	1940	0 21	A N 16	N N		Ds T		625		Lp	
4G2	GS MWD	10-7-64 1940	Metropolitan Water Dist., well 25	1940	0 21	A N 16	N N		Ds T		625		Lp	
4H1	GS MWD	10-7-64 1940	Metropolitan Water Dist., well 13	1940	0 41	A N 36	N N		Ds T		625		C,Lp	
4H2	GS MWD	10-7-64 1940	Metropolitan Water Dist., well 15	1940	0 20	A N 24	N N		Ds T		625		Lp	
4H3	GS MWD	10-7-64 1940	Metropolitan Water Dist., well 18	1940	0 21	A N 22	N N		Ds T		625		Lp	
4J1	GS MWD	10-7-64 1940	Metropolitan Water Dist., well 20	1940	0 21	A N 16	N N		Ds T		625		Lp	
4K1	GS MWD	10-7-64 1940	Metropolitan Water Dist., well 22	1940	0 21	A N 16	N N		Ds T		625		Lp	
4Q1	GS MWD	10-7-64 1940	Metropolitan Water Dist., well 23	1940	0 21	A N 16	N N		Ds T		625		C,Lp	
1OD1	GS MWD	10-7-64 1940	Metropolitan Water Dist., well 10	1940	0 21	A N 36	N N		Ds T		625		Lp	
1OD2	GS MWD	10-7-64 1940	Metropolitan Water Dist., well 11	1940	0 23	A N 16	N N		Ds T		625		Lp	
1OD3	GS MWD	10-7-64 1940	Metropolitan Water Dist., well 12	1940	0 21	A N 16	N N		Ds T		625		Lp	

State well number	Other numbers and source of data	Date of observation	Owner or user	Year completed	Depth of well (feet)	Type and diameter (inches)	Type of pump and power	Yield (gpm)	Use	Measuring point		Altitude of lsd (feet)	Water level below lsd (feet)	Other data
										Description	Distance above or below lsd (feet)			
118-10L1	GS MWD	1-7-64 1940	Metropolitan Water Dist., well 7	1940	0 37	A N 36	N N N N		Ds T		630		C,Lp	
11M2	GS MWD	1-7-64 1940	Metropolitan Water Dist., well 8	1940	0 21	A N 16	N N N N		Ds T		630		Lr	
10P-	GS MWD	1-7-64 1940	Metropolitan Water Dist., well 9	1940	0 21	A N 16	N N N N		Ds T		630		Lp	
13B1	GS MWD	10-8-64 1940	Metropolitan Water Dist., well 1	1940	0 35	A N 36	N N N N		Ds T		625		Lp	
13L1	GS MWD	10-8-64 1940	Metropolitan Water Dist., well 2	1940	0 19	A N 36	N N N N		Ds T		625		Lp	
13Q1	GS MWD	10-8-64 1940	Metropolitan Water Dist., well 3	1940	0 40	A N 36	N N N N		Ds T		625		C,Lp	
15O1	GS MWD	10-7-64 1940	Metropolitan Water Dist., well 6	1940	0 27	A N 36	N N N N		Ds T		630		Lp	
22B1	GS MWD	10-8-64 1940	Metropolitan Water Dist., well 4	1940	0 21	A N 36	N N N N		Ds T		630		C,Lp	
22K1	GS MWD	10-8-64 1940	Metropolitan Water Dist., well 3	1940	0 21	A N 36	N N N N		Ds T		630		Lp	
22Q1	GS MWD	10-8-64 1940	Metropolitan Water Dist., well 8	1940	0 37	A N 36	N N N N		Ds T		630		Lp	
23A1	GS MWD	10-8-64 1940	Metropolitan Water Dist., well 10	1940	0 21	A N 36	N N N N		Ds T		625		Lp	
23B1	GS MWD	10-8-64 1940	Metropolitan Water Dist., well 7	1940	0 41	A N 16	N N N N		Ds T		625		Lp	
23B2	GS MWD	10-8-64 1940	Metropolitan Water Dist., well 9	1940	0 56	A N 36	N N N N		Ds T		625		C,Lp	
23B3	GS MWD	10-8-64 1940	Metropolitan Water Dist., well 11	1940	0 21	A N 16	N N N N		Ds T		625		Lr	
23B4	GS MWD	10-8-64 1940	Metropolitan Water Dist., well 12	1940	0 21	A N 18	N N N N		Ds T		625		Lp	

T. I. N., F. 18 E.--Continued

State well number	Other numbers and source of data	Date of observation	Owner or user	Year completed	Depth of well (feet)	Type and diameter (inches)	Type of pump and power	Yield (gpm)	Use	Measuring point		Altitude of lsd (feet)	Water level below lsd (feet)	Other data
										Description	Distance above or below (feet)			
T. 1 N., R. 18 E.--Continued														
1/18-23K1	GS MWD	10- 8-64 1940	Metropolitan Water Dist., well 2	1940	0 24	A N 36	N N N N		Ds T		625		Lp	
23P1	GS MWD	10- 8-64 1940	Metropolitan Water Dist., well 1	1940	0 21	A N 36	N N N N		Ds T		625		Lp	
23R1	GS MWD	10- 8-64 1940	Metropolitan Water Dist., well 6	1940	0 32	A N 36	N N N N		Ds T		625		C, Lp	
24J1	GS MWD	10- 8-64 1940	Metropolitan Water Dist., well 4	1940	0 20	A N 36	N N N N		Ds T		625		Lp	
25B1	GS MWD	10- 8-64 1940	Metropolitan Water Dist., well 5	1940	0 28	A N 36	N N N N		Ds T		625		Lp	
26Z1	GS M-216	10- 7-64	Miller well						Ds		630			
T. 2 N., R. 17 E.														
2/17-11M1	GS	8-22-64	Metropolitan Water Dist., well W-2		102.0	R 12	N N		Un	Tc 1.0	720	93.55		
11R1	GS DGT M	8-22-64 11- -17 1908	Metropolitan Water Dist.		35.0 60 60	D 60 D D	N N L H		Ds Dm	Tc 0	680	(a) 59.9		
13N1	GS	8-24-64	National Chloride Co.		78	12	T G		In		620	(b)		
14D1	GS MWD	8-24-64	Metropolitan Water Dist., well W-1		76.5 88	12	N N	10	Un	Tc .5	670	64.40		
15J1	GS MWD	10- 8-64 1940	Metropolitan Water Dist., well 1 and B-3	1940	0 36	A N 24	N N N N		Ds T		625		Lp	
15L1	GS MWD	10- 8-64 1940	Metropolitan Water Dist., well 39	1940	0 21	A N 16	N N N N		Ds T		620		Lp	
15M1	GS MWD	10- 8-64 1940	Metropolitan Water Dist., well 37	1940	0 25	A N 16	N N N N		Ds T		620		Lp	
15M2	GS MWD	10- 8-64 1940	Metropolitan Water Dist., well 38	1940	0 21	A N 16	N N N N		Ds T		620		Lp	
15Q1	GS MWD	10- 8-64 1940	Metropolitan Water Dist., well 41	1940	0 30	A N 16	N N N N		Ds T		620		Lp	

See footnotes at end of table.

State well number	Other numbers and source of data	Date of observation	Owner or user	Year completed	Depth of well (feet)	Type and diameter (inches)	Type of pump and power	Yield (gpm)	Use	Measuring point		Altitude of lsd (feet)	Water level below lsd (feet)	Other data
										Description	Distance above or below lsd (feet)			
2/17-1502	GS MWD	10- 8-64 1940	Metropolitan Water Dist., well 40	1940	0 21	A N 16	N N	N N	Ds T		62		C, Lp	
15R1	GS MWD	10- 8-64 1940	Metropolitan Water Dist., well 2	1940	0 28	A N 24	N N	N N	Ds T		61		Lf	
16A1	GS	8-22-64	Danby Salt Corp. well A		104.5	12	S 1 $\frac{1}{2}$		In	Tc	1.0	650	65.17	L
16Q1	GS	8-22-64	Danby Salt Corp. well 3				T 15		In				(t)	
16Q2	GS	8-22-64	Danby Salt Corp. well 2		21.0		N N		Un	Tcc	-0.0	620	1.22	
16R1	GS GS	8-21-64 8-21-64	Danby Salt Corp. well 7		23.5	A 24	C D		In	Tcc	-1.0	620	18.59 e21.32	
16R2	GS GS	8-22-64 8-22-64	Danby Salt Corp. well 7c		25.0	A 24	C D		In	Tc	-1.0	620	17.96 e24.04	
16R3	GS	8-22-64	Danby Salt Corp. well 7b		22.0	A 24	N N		Un	Tc	1.0	620	10.34	
16R4	GS	8-22-64	Danby Salt Corp. well 7a		22.0	A 24	N N		Un	Tc	1.0	620	18.14	
16R5	GS	8-22-64	Danby Salt Corp. well 5		20.0	A 24	N N		Un	Tc	3.0	620	1.18	
16R6	GS	8-22-64	Danby Salt Corp. well 4		20.0	A 24	N N		Un	Tc	3.0	620	17.48	
16R7	GS GS	10- 7-64 8-22-64	Danby Salt Corp. well 6		19.6	A 24	N N		Un Un	Tc	2.7	620	17.36 17.12	
17B1	GS MWD	10- 8-64 1940	Metropolitan Water Dist., well 23	1940	0 28	A N 24	N N		Ds T			630		Lp
17B2	GS MWD	10- 8-64 1940	Metropolitan Water Dist., well 22	1940	0 26	A N 24	N N		Ds T			630		Lp
17G1	GS MWD	10- 8-64 1940	Metropolitan Water Dist., well 24	1940	0 32	A N 24	N N		Ds T			625		Lp
17H1	GS MWD	10- 8-64 1940	Metropolitan Water Dist., well 21	1940	0 21	A N 24	N N		Ds T			630		Lp

T. 2 N. R. 17 E. ---Continued

See footnotes at end of table.

State well number	Other numbers and source of data	Date of observation	Owner or user	Year completed	Depth of well (feet)	Type and diameter (inches)	Type of pump and power	Yield (gpm)	Use	Measuring point		Altitude of lsd (feet)	Water level below lsd (feet)	Other data
										Description	Distance below lsd (feet)			
2/17-17J1	GS MWD	10- 8-64 1940	Metropolitan Water Dist., well 20	1940	0 26	A N 24	N N	N N	Ds T		625		Lp	
17K1	GS MWD	10- 8-64 1940	Metropolitan Water Dist., well 25	1940	0 34	A N 16	N N	N N	Ds T		630		C,Lp	
17K2	GS MWD	10- 8-64 1940	Metropolitan Water Dist., well 27	1940	0 36	A N 16	N N	N N	Ds T		630		Lp	
17R1	GS MWD	10- 8-64 1940	Metropolitan Water Dist., well 19	1940	0 33	A N 24	N N	N N	Ds T		625		Lp	
17R2	GS MWD	10- 8-64 1940	Metropolitan Water Dist., well 26	1940	0 21	A N 16	N N	N N	Ds T		640		Lp	
20A1	GS MWD	10- 8-64 1940	Metropolitan Water Dist., well 28	1940	0 24	A N 16	N N	N N	Ds T		640		Lp	
21B1	GS	10- 7-64	Danby Salt Corp.	1964	d260	R	N N	N N	Un		620	(a)	Lp	
21D1	GS MWD	10- 8-64 1940	Metropolitan Water Dist., well 18	1940	0 31	A N 24	N N	N N	Ds T		630		Lp	
21D2	GS MWD	10- 8-64 1940	Metropolitan Water Dist., well 29	1940	0 21	A N 16	N N	N N	Ds T		630		Lp	
21D3	GS MWD	10- 8-64 1940	Metropolitan Water Dist., well 17	1940	0 20	A N 16	N N	N N	Ds T		625		Lp	
21E1	GS MWD	10- 8-64 1940	Metropolitan Water Dist., well 30	1940	0 21	A N 16	N N	N N	Ds T		635		Lp	
21F1	GS MWD	10- 8-64 1940	Metropolitan Water Dist., well 31	1940	0 21	A N 36	N N	N N	Ds T		630		Lp	
21J1	GS MWD	10- 8-64 1940	Metropolitan Water Dist., well 33	1940	0 21	A N 16	N N	N N	Ds T		635		C,Lp	
21K1	GS MWD	10- 8-64 1940	Metropolitan Water Dist., well 32	1940	0 21	A N 16	N N	N N	Ds T		625		Lp	
22A1	GS	10-20-64	Metropolitan Water Dist., well 51	1940	0	A N	N N	N N	Ds	Tc	0	615.4	W	
22B1	GS	10-20-64	Metropolitan Water Dist., well 1DE/	1940	0	A N	N N	N N	Ds			620		
22M1	GS MWD	10- 8-64 1940	Metropolitan Water Dist., well 34	1940	0 21	A N 16	N N	N N	Ds T		625		Lp	

T. 2 N., R. 17 E.--Continued

State well number	Other numbers and source of data	Date of observation	Owner or user	Year completed	Depth of well (feet)	Type and diameter (inches)	Type of pump and power	Yield (gpm)	Use	Measuring point		Altitude of lsd (feet)	Water level below lsd (feet)	Other data
										Description	Distance below lsd (feet)			
2/17-22P1	GS MWD	10-8-64 1940	Metropolitan Water Dist., well 35	1940	0 35	A N 16	N N N N		Ds T		620		Lp	
22Q1	GS MWD	10-8-64 1940	Metropolitan Water Dist., well 36	1940	0 18	A N 16	N N N N		Ds T		620		Lp	
23A1	GS MWD	10-8-64 1940	Metropolitan Water Dist., well 4	1940	0 41	A N 36	N N N N		Ds T		620		C,Lp	
23A2	GS MWD	10-8-64 1940	Metropolitan Water Dist., well 5	1940	0 21	A N 24	N N N N		Ds T		620		Lf	
23A3	GS MWD	10-8-64 1940	Metropolitan Water Dist., well 6	1940	0 21	A N 24	N N N N		Ds T		620		Lf	
23A4	GS MWD	10-8-64 1940	Metropolitan Water Dist., well 8	1940	0 29	A N 24	N N N N		Ds T		620		Lr	
23A5	GS MWD	10-8-64 1940	Metropolitan Water Dist., well 7	1940	0 27	A N 24	N N N N		Ds T		620		Lf	
23B1	GS MWD	10-8-64 1940	Metropolitan Water Dist., well 9	1940	0 31	A N 24	N N N N		Ds T		620		Lf	
23C1	GS MWD	10-8-64 1940	Metropolitan Water Dist., well 3	1940	0 31	A N 24	N N N N		Ds T		620		Lp	
23C2	GS MWD	10-8-64 1940	Metropolitan Water Dist., well 10	1940	0 30	A N 24	N N N N		Ds T		620		Lp	
23D1	GS	8-21-64	Metropolitan Water Dist., wells 2 and 1C			D 40	C D	39.5	In	Tec -7.2	625.9	c 118.0	C,W	
23D2	GS	8-24-64	Metropolitan Water Dist., wells 1 and 1B		16.8	48	N N		Ds	Tec 0	617.8	(a)		
23D3	GS DWR-23X1	8-24-64	Metropolitan Water Dist.		4.0	72	N N		Ds		620	(a)	C	
23E1	GS	8-21-64	Metropolitan Water Dist., wells 3 and 1DE/			D 40	C D	300	In	Tec -0.0	614.2	120.1	W	
23F1	GS MWD	10-8-64 1940	Metropolitan Water Dist., well 11	1940	0 32	A N 24	N N N N		Ds T		620		Lp	

T. 2 N., R. 17 E.---Continued

See footnotes at end of table.

State well number	Other numbers and source of data	Date of observation	Owner or user	Year completed	Depth of well (feet)	Type and diameter (inches)	Type of pump and power	Yield (gpm)	Use	Measuring point		Altitude of lsd (feet)	Water level below lsd (feet)	Other data
										Description	Distance above or below (-) lsd (feet)			
T. 2 N., R. 17 E.--Continued														
2/17-23H1	GS MWD	10- 8-64 1940	Metropolitan Water Dist., well 12	1940	0 30	A N 24	N N N N		Ds T		620		Lp	
23H1	GS MWD	10- 8-64 1940	Metropolitan Water Dist., well 13	1940	0 30	A N 24	N N N N		Ds T		620		Lp	
23J1	GS MWD	10- 8-64 1940	Metropolitan Water Dist., well 14	1940	0 32	A N 24	N N N N		Ds T		620		C,Lp	
23K1	GS MWD	10- 8-64 1940	Metropolitan Water Dist., well 15	1940	0 21	A N 24	N N N N		Ds T		620		Lp	
23L1	GS MWD	10- 8-64 1940	Metropolitan Water Dist., well 16	1940	0 30	A N 24	N N N N		Ds T		620		Lp	
24Q1	GS	8-24-64	National Chloride Co.	1964	50	D 12	N N		Un		620	(b)		
25E1	GS	8-24-64	National Chloride Co.	1963	42.5	A 12	N N		Un	Tc 0.5	620	13.58		
25B2	GS	8-24-64	National Chloride Co.	1963	31.0	A 12	N N		Un	Tc 3.0	620	11.27		
T. 2 N., R. 18 E.														
2/18-19Z1	GS B	8-23-64 1953	Danby 1	1953	0 880	R N (g)	N N N N		Ds T		620		Lp	
27M1	GS MWD	10- 7-64 12- 1-40	Metropolitan Water Dist., well 59	1940	0 41	A N 36	N N N N		Ds T		625		Lp	
27R1	GS MWD	10- 7-64 12- 2-40	Metropolitan Water Dist., well 60	1940	0 41	A N 36	N N N N		Ds T		625		Lp	
28M1	GS MWD	10- 7-64 12- 1-40	Metropolitan Water Dist., well 58	1940	0 41	A N 16	N N N N		Ds T		625		C,Lp	
28N1	GS MWD	10- 7-64 1940	Metropolitan Water Dist., well 25	1940	0 21	A N 16	N N N N		Ds T		625		Lp	
28R1	GS MWD	10- 7-64 12- 3-40	Metropolitan Water Dist., well 64	1940	0 41	A N 16	N N N N		Ds T		625		Lp	
29A1	GS MWD	10- 7-64 11-30-40	Metropolitan Water Dist., well 57	1940	0 41	A N 36	N N N N		Ds T		625		Lp	
29C1	GS MWD	10- 7-64 11-30-40	Metropolitan Water Dist., well 54	1940	0 21	A N 16	N N N N		Ds T		625		Lp	
29C2	GS MWD	10- 7-64 11-30-40	Metropolitan Water Dist., well 56	1940	0 21	A N 16	N N N N		Ds T		625		Lp	

See footnotes at end of table.

State well number	Other numbers and source of data	Date of observation	Owner or user	Year completed	Depth of well (feet)	Type and diameter (inches)	Type of pump and power	Yield (gpm)	Use	Measuring point		Altitude of lsd (feet)	Water level below lsd (feet)	Other data
										Distance above or below lsd (feet)	Description			
T. 2 N., R. 18 E.--Continued														
2/18-29D1	GS MWD	10- 8-64 1940	Metropolitan Water Dist., well 1	1940	0 41	A 36	N N N		Ds T		625		C, Lp	
29E1	GS MWD	10- 7-64 11-30-40	Metropolitan Water Dist., well 55	1940	0 21	A 16	N N N		Ds T		625		Lf	
29F1	GS MWD	10- 7-64 11-30-40	Metropolitan Water Dist., well 52	1940	0 21	A 16	N N N		Ds T		625		Lf	
29G1	GS MWD	10- 7-64 11-30-40	Metropolitan Water Dist., well 53	1940	0 21	A 16	N N N		Ds T		625		Lf	
29K1	GS MWD	10- 7-64 11-29-40	Metropolitan Water Dist., well 43	1940	0 21	A 16	N N N		Ds T		625		Lf	
29K2	GS MWD	10- 7-64 11-30-40	Metropolitan Water Dist., well 45	1940	0 21	A 16	N N N		Ds T		625		Lp	
29L1	GS MWD	10- 7-64 11-29-40	Metropolitan Water Dist., well 44	1940	0 24	A 16	N N N		Ds T		625		Lp	
29M1	GS MWD	10- 7-64 11-29-40	Metropolitan Water Dist., well 50	1940	0 21	A 16	N N N		Ds T		625		Lf	
29M2	GS MWD	10- 7-64 11-29-40	Metropolitan Water Dist., well 51	1940	0 21	A 16	N N N		Ds T		625		Lp	
29N1	GS MWD	10- 7-64 11-29-40	Metropolitan Water Dist., well 48	1940	0 21	A 16	N N N		Ds T		625		Lp	
29N2	GS MWD	10- 7-64 11-29-40	Metropolitan Water Dist., well 49	1940	0 21	A 16	N N N		Ds T		625		Lp	
29P1	GS MWD	10- 7-64 11-29-40	Metropolitan Water Dist., well 46	1940	0 21	A 16	N N N		Ds T		625		Lp	
29P2	GS MWD	10- 7-64 11-29-40	Metropolitan Water Dist., well 47	1940	0 21	A 16	N N N		Ds T		625		Lp	
29Q1	GS MWD	10- 7-64 11-27-40	Metropolitan Water Dist., well 30	1940	0 21	A 16	N N N		Ds T		625		Lp	
29Q2	GS MWD	10- 7-64 11-28-40	Metropolitan Water Dist., well 33	1940	0 21	A 16	N N N		Ds T		625		Lp	

State well number	Other numbers and source of data	Date of observation	Owner or user	Year completed	Depth of well (feet)	Type and diameter (inches)	Type of pump and power	Yield (gpm)	Use	Measuring point		Altitude of lsd (feet)	Water level below lsd (feet)	Other data
										Description	Distance above or below (-) (feet)			
T. 2 N., R. 18 E.--Continued														
2/18-29Q3	GS MWD	10-7-64 11-28-40	Metropolitan Water Dist., well 34	1940	0 21	A 16	N N N		Ds T		625		Lp	
29Q4	GS MWD	10-7-64 11-28-40	Metropolitan Water Dist., well 40	1940	0 21	A 16	N N N		Ds T		625		Lp	
29Q5	GS MWD	10-7-64 11-28-40	Metropolitan Water Dist., well 41	1940	0 21	A 16	N N N		Ds T		625		Lp	
29Q6	GS MWD	10-7-64 11-28-40	Metropolitan Water Dist., well 42	1940	0 41	A 16	N N N		Ds T		625		Lp	
29R1	GS MWD	10-7-64 1940	Metropolitan Water Dist., well 26	1940	0 21	A 16	N N N		Ds T		625		Lp	
29R2	GS MWD	10-7-64 1940	Metropolitan Water Dist., well 27	1940	0 21	A 16	N N N		Ds T		625		Lp	
29R3	GS MWD	10-7-64 11-27-40	Metropolitan Water Dist., well 31	1940	0 21	A 16	N N N		Ds T		625		Lp	
29R4	GS MWD	10-7-64 11-27-40	Metropolitan Water Dist., well 32	1940	0 21	A 16	N N N		Ds T		625		Lp	
30K1	GS MWD	10-8-64 1940	Metropolitan Water Dist., well 2	1940	0 41	A 36	N N N		Ds T		625		Lp	
30Q1	GS MWD	10-8-64 1940	Metropolitan Water Dist., well 3	1940	0 41	A 36	N N N		Ds T		625		C, Lp	
32A1	GS MWD	10-7-64 1940	Metropolitan Water Dist., well 21	1940	0 21	A 16	N N N		Ds T		625		Lp	
32A2	GS MWD	10-7-64 1940	Metropolitan Water Dist., well 22	1940	0 21	A 16	N N N		Ds T		625		Lp	
32A3	GS MWD	10-7-64 1940	Metropolitan Water Dist., well 28	1940	0 21	A 16	N N N		Ds T		625		Lp	
32A4	GS MWD	10-7-64 11-28-40	Metropolitan Water Dist., well 37	1940	0 21	A 16	N N N		Ds T		625		Lp	
32B1	GS MWD	10-7-64 11-27-40	Metropolitan Water Dist., well 29	1940	0 21	A 16	N N N		Ds T		625		Lp	

State well number	Other numbers and source of data	Date of observation	Owner or user	Year completed	Depth of well (feet)	Type and diameter (inches)	Type of pump and power	Yield (gpm)	Use	Measuring point		Altitude of lsd (feet)	Water level below lsd (feet)	Other data
										Description	Distance above or below lsd (feet)			
2/18-32B2	GS	10- 7-64	Metropolitan Water Dist., well 35	1940	0	A	N	N	Ds	T		625		Lp
	MWD	11-28-40												
32B3	GS	10- 7-64	Metropolitan Water Dist., well 36	1940	0	A	N	N	Ds	T		625		Lp
	MWD	11-28-40												
32G1	GS	10- 7-64	Metropolitan Water Dist., well 38	1940	0	A	N	N	Ds	T		625		Lp
	MWD	11-28-40												
32H1	GS	10- 7-64	Metropolitan Water Dist., well 18	1940	0	A	N	N	Ds	T		625		Lp
	MWD	1940												
32H2	GS	10- 7-64	Metropolitan Water Dist., well 19	1940	0	A	N	N	Ds	T		625		Lp
	MWD	1940												
32N1	GS	10- 8-64	Metropolitan Water Dist., well 4	1940	0	A	N	N	Ds	T		625		Lp
	MWD	1940												
32P1	GS	8-24-64	Metropolitan Water Dist.	1940	0	N	N	N	Ds	Un	Tc	625	19.38	C
	CS	6-23-55												
32P2	GS	10- 7-64	Metropolitan Water Dist., well 39	1940	0	A	N	N	Ds	T		625		Lp
	MWD	11-28-40												
32R1	GS	10- 8-64	Metropolitan Water Dist., well 11	1940	0	A	N	N	Ds	T		625		Lp
	MWD	1940												
33C1	GS	10- 7-64	Metropolitan Water Dist., well 14	1940	0	A	N	N	Ds	T		625		Lp
	MWD	1940												
33D1	GS	10- 7-64	Metropolitan Water Dist., well 16	1940	0	A	N	N	Ds	T		625		Lp
	MWD	1940												
33D2	GS	10- 7-64	Metropolitan Water Dist., well 20	1940	0	A	N	N	Ds	T		625		Lp
	MWD	1940												
33D3	GS	10- 7-64	Metropolitan Water Dist., well 23	1940	0	A	N	N	Ds	T		625		Lp
	MWD	1940												
33D4	GS	10- 7-64	Metropolitan Water Dist., well 24	1940	0	A	N	N	Ds	T		625		Lp
	MWD	1940												
33E1	GS	10- 8-64	Metropolitan Water Dist., well 9	1940	0	A	N	N	Ds	T		625		Lp
	MWD	1940												

T. 2 N., R. 18 E.--Continued

State well number	Other numbers and source of data	Date of observation	Owner or user	Year completed	Depth of well (feet)	Type and diameter (inches)	Type of pump and power	Yield (gpm)	Use	Measuring point		Altitude of lsd (feet)	Water level below lsd (feet)	Other data
										Description	Distance above or below (-) lsd (feet)			
T. 2 N., R. 18 E.--Continued														
2/18-33E2	GS MWD	10-7-64 1940	Metropolitan Water Dist., well 17	1940	0 27	A N 16	N N N		Ds T		625		Lp	
33F1	GS MWD	10-8-64 1940	Metropolitan Water Dist., well 8	1940	0 21	A N 24	N N N		Ds T		625		Lp	
33F2	GS MWD	10-7-64 1940	Metropolitan Water Dist., well 15	1940	0 21	A N 16	N N N		Ds T		625		Lp	
33L1	GS MWD	10-8-64 1940	Metropolitan Water Dist., well 6	1940	0 21	A N 16	N N N		Ds T		625		Lp	
33L2	GS MWD	10-8-64 1940	Metropolitan Water Dist., well 7	1940	0 21	A N 16	N N N		Ds T		625		Lp	
33L3	GS MWD	10-7-64 1940	Metropolitan Water Dist., well 13	1940	0 28	A N 16	N N N		Ds T		625		Lp	
33M1	GS MWD	10-8-64 1940	Metropolitan Water Dist., well 10	1940	0 21	A N 16	N N N		Ds T		625		Lp	
33N1	GS MWD	10-8-64 1940	Metropolitan Water Dist., well 12	1940	0 21	A N 16	N N N		Ds T		625		Lp	
33P1	GS MWD	10-8-64 1940	Metropolitan Water Dist., well 5	1940	0 21	A N 36	N N N		Ds T		625		Lp	
34B1	GS MWD	10-7-64 12-2-40	Metropolitan Water Dist., well 63	1940	0 41	A N 16	N N N		Ds T		625		Lp	
34G1	GS MWD	10-7-64 12-2-40	Metropolitan Water Dist., well 62	1940	0 41	A N 16	N N N		Ds T		625		Lp	
34H1	GS MWD	10-7-64 12-2-40	Metropolitan Water Dist., well 61	1940	0 41	A N 16	N N N		Ds T		625		C,Lp	
34R1	GS B	8-22-64 1953	Metropolitan Water Dist. Danby 2	1953	0 460	R N (g)	N N N		Ds T		625		Lp	
35H1	GS O DGT O	10-6-64 1913 1910 1910	Atchison, Topeka, and Santa Fe Railway, well 1	1910	0 118 121	C N 10	N N N		Ds Ds		625		C,L	40 26

See footnotes at end of table.

State well number	Other numbers and source of data	Date of observation	Owner or user	Year completed	Depth of well (feet)	Type and diameter (inches)	Type of pump and power	Yield (gpm)	Use	Measuring point		Altitude of lsd (feet)	Water level below lsd (feet)	Other data
										Description	Distance above or below lsd (feet)			
<u>T. 2 N., R. 18 E.--Continued</u>														
2/18-35H2	GS	8-24-64	Atchison, Topeka, and Santa Fe Railway, well 2	1913	0	C	N N N	73	Ds			625	20	C, L
	0	3-23-14			594	12	L A		RR					
	DWR-26X1													
35H3	GS	8-22-64	Atchison, Topeka, and Santa Fe Railway, well 3	1945	450	12	T N	120	Un	Hpb	1.0	626	15.06	C, L
	GS	3-30-61							Un				15.96	
	0	5-7-46							RR				19	
	0	5-7-46							RR				629	
	D	10-5-45							RR				19	
36E1	GS	10-6-64	Atchison, Topeka, and Santa Fe Railway		37.5	4	N N N		Un	Tc	1.0	626	19.71	
<u>T. 2 N., R. 20 E.</u>														
2/20-17B1	GS	10-6-64	Johnson Well		h40+	D	N N		Un	Lsd		1,920		
17F1	GS	10-6-64			h40	D	N N		Un	Lsd		1,920	h40	
<u>T. 3 N., R. 15 E.</u>														
3/15-20G1	GS	12-2-65			13.2	1½	N N		Un	Tc	0	545	8.50	
20G2	GS	12-2-65			0	3	L N		Ds	Tc	4.0	545		
32Z1	GS	12-2-65			0				Ds			545		Lp
	B	1953	Cadiz 1		500				T					
<u>T. 3 N., R. 17 E.</u>														
3/17-10J51	GS	8-25-64			0		N N		Ds			2,480	(a)	
	M-204	1908											(a)	
<u>T. 3 N., R. 20 E.</u>														
3/20-31B1	GS	12-2-65	Martin's Well		13.4	D	N N		Ds	Tcc		2,160	(a)	
	DGT	1917	R. A. Martin		7				Un				5	
32P1	GS	3-17-65			1.4	D (J)	N N		Un	Tc	0		s.15	
<u>T. 4 N., R. 11 E.</u>														
4/11-11B1	GS	8-10-64			28.0	D	N N		Ds	Tc	0	640	(a)	
16B1	GS	8-10-64	U.S. Navy		60.0	D	N N		Ds	Lsd		775	(a)	

State well number	Other numbers and source of data	Date of observation	Owner or user	Year completed	Depth of well (feet)	Type and diameter (inches)	Type of pump and power	Yield (gpm)	Use	Measuring point		Altitude of lsd (feet)	Water level below lsd (feet)	Other data
										Description	Distance above (-) or below (+) lsd (feet)			
<u>T. 4 N., R. 12 E.</u>														
4/12-2D1	GS	8- 9-64	National Chloride Co.		21.0	D	N N		Un	Lsd	0	599	16.62	
2N1	GS	8- 8-64	National Chloride Co.		10.5	D	N N		Un	Lsd	0	595	10.0	
3N1	GS	8- 8-64	National Chloride Co.		15.0	D	N N		Un	Lsd	0	593	8.46	
3Q1	GS	8- 8-64	National Chloride Co.		19.0	D	N N		Un	Lsd	0	594	11.0	
3Z1	GS B	8- 9-64 1953	National Chloride Co. Bristol 2	1953	1,007	R			Ds T			596		Lp
5Z1	GS CDM	8-13-64 4-23-45	National Chloride Co.						Ds	Lsd	0	596	5.0	
6R1	GS CDM	8-11-64 4-24-45	National Chloride Co.	1945	0 3.5	48 D	N N		Ds T	Tc	0	598		C
9C1	GS CDM	8- 8-64 7- -39	National Chloride Co. Metropolitan Water Dist., hole 4	1939	2.0 97	N A 16	N N		Ds T	Lsd		593	2.5	Lp
9D1	GS CDM	8- 8-64 7- -39	National Chloride Co. Metropolitan Water Dist., hole 3	1939	0 50	N A 16	N N		Ds T	Lsd		593	4	Lp
9H1	GS CDM	8- 8-64 7- -39	National Chloride Co. Metropolitan Water Dist., hole 5	1939	0 53	N A 16	N N		Ds T	Lsd		596	2	Lp
13A1	GS CDM	8-12-64 7- -39	Metropolitan Water Dist., hole 10	1939	0 54	N A 16	N N		Ds T			597	(v)	Lp
13D1	GS CDM	8-12-64 7- -39	Metropolitan Water Dist., hole 11	1939	0 50	N A 16	N N		Ds T	Lsd		596	6	C,Lp
<u>T. 4 N., R. 13 E.</u>														
4/13-5D1	GS CDM	8- 9-64 7- -39	National Chloride Co. Metropolitan Water Dist., hole 7	1939	22.0 66	A 16	N N		Ds T	Lsd		606	(a) 46	Lp
5N1	GS CDM	8- 9-64 7- -39	Metropolitan Water Dist., hole 8	1939	0 90	N A 16	N N		Ds T	Lsd		602	54	Lp

See footnotes at end of table.

State well number	Other numbers and source of data	Date of observation	Owner or user	Year completed	Depth of well (feet)	Type and diameter (inches)	Type of pump and power	Yield (gpm)	Use	Measuring point		Altitude of lsd (feet)	Water level below lsd (feet)	Other data
										Description	Distance below lsd (feet)			
T. 4 N., R. 13 E.--Continued														
4/13-17D1	GS CDM	7-12-64 7- -39	Metropolitan Water Dist., hole 9	1939	53	A 16	N N N		Ds T	Lsd	538	38	Lf	
T. 4 N., R. 14 E.														
4/14-19D1	GS	8-10-64	Calumet Mine		h150	D 36	N N		Ds	Tc	72	(a)		
T. 4 N., R. 15 E.														
4/15-24E1	GS	8-20-64	Atchison, Topeka, and Santa Fe Railway, Archer 1	1910	330	C 10	T N		Un	Hpb	65	26.15 26.7 286	C, L	
T. 4 N., R. 17 E.														
4/17-50S1	GS M-203	8-23-64 1908	Sheep Camp Spring			N	N N		Un		3,440	(a m)		
T. 5 N., R. 5 E.														
5/5-2H1	GS	10- 8-64	U.S. Navy (Maunee Mine)		139.5	D 72	N N		Ds	Tc	2,360	(a)		
3P1	GS	10- 8-64	U.S. Navy		149.1	C 12	N N		Ds	Tc	1,02,710	(a)		
T. 5 N., R. 8 E.														
5/8-18N1	GS	8-12-64	U.S. Navy (Morgan's Well)		10.2	D 28	L N		Un	Tc	3,215	10.02	C	
T. 5 N., R. 10 E.														
5/10-3A1	GS	8- 6-64	U.S. Navy		45.0	D	N N		Ds	Lsd	660	(a)		
14M1	GS	8-10-64	U.S. Navy		27.0	D 120	N N		Un	Tc	638	26.74		
23R1	GS	8-10-64	U.S. Navy		27.5	D 96	N N		Un	Tcc	630	24.71		
33B1	GS M-202	8-10-64 1908	U.S. Navy		35.0	D	N N		Ds	Lsd	1,540	(a)		
T. 5 N., R. 11 E.														
5/11-25Q1	GS CDM	8-11-64 7- -39	Metropolitan Water Dist., hole 2	1939	0 50	N A 16	N N		Ds T	Lsd	600	5	Lp	
25R1	GS CDM	8-11-64 7- -39	Metropolitan Water Dist., hole 1	1939	0 50	N A 16	N N		Ds T	Lsd	598	2.8	Lp	
34ZS1	GS M-179	8-10-64 1908	U.S. Navy Mascot Spring						Ds					

See footnotes at end of table.

State well number	Other numbers and source of data	Date of observation	Owner or user	Year completed	Depth of well (feet)	Type and diameter (inches)	Type of pump and power	Yield (gpm)	Use	Measuring point		Altitude of lsd (feet)	Water level below lsd (feet)	Other data
										Description	Distance above or below (feet)			
<u>T. 5 N., R. 11 W.</u>														
5/11-36F1	GS CDM	8-11-64 7- -39	Metropolitan Water Dist., hole 15	1939	0 45	N A 16	N N	N N	Ds T	Lsd 0	600	5	C, Lp	
36H1	GS CDM	8-11-64 7- -39	Metropolitan Water Dist., hole 13	1939	0 50	N A 16	N N	N N	Ds T	Lsd 0	598	14	C, Lp	
36R1	GS CDM	8-12-64 7- -39	Metropolitan Water Dist., hole 14	1939	0 44	N A 16	N N	N N	Ds T	Lsd 0	598	32	Lp	
<u>T. 5 N., R. 12 E.</u>														
5/12-2G1	GS	8- 6-64	Leslie Salt Co.				T 25	60	In	Hpb 1.0	665	c 1130.65		
3K1	GS	8-12-64	H. B. Burris		14.0	A	N N		Ds	Lsd 0	610	(a)		
3L1	GS	8-12-64	H. B. Burris		54.0	A	N N		Un	Lsd 0	610	15.79		
3L2	GS	8-12-64	H. B. Burris		51.0	A	N N		Un	Lsd 0	611	16.68		
3L3	GS	8-12-64	H. B. Burris		18.00	A	N N		Un	Lsd 0	612	17.57		
3P1	GS	8-12-64	H. B. Burris		65.0	A 18	T 5		Un	Lsd 0	610	(b)		
3P2	GS	8-12-64	H. B. Burris		51.0	A	N N		Un	Lsd 0	610	15.94		
4J1	GS	8-12-64	H. B. Burris		50.0	A	N N		Un	Lsd 0	610	14.77		
5B1	GS DWR-5B1 DWR-5B1 DWR-5X1	8-12-64 9- 4-58 5-10-54 1948	Mrs. G. Bush Conn Pulos Conn Pulos	1948		8	L 1 1/2 L W	10	Dm	Tc .5	640	40.50 35.9 c106.0 34.1	C	
5B2	GS	8-12-64	A. A. Plimm			6	L 3/4	10	Dm	Tc 1.0	638	140.6		
5Z1	GS NHD	8-12-64 1914			0 700	N	N N		Ds		639		L	
5Z2	GS	8-12-64	Atchison, Topeka, and Santa Fe Railway	1884	0	N	N N		Ds		639			
10Z1	GS DGT	8--1884 8-12-64 1917	Southern Pacific Co. Amboy 1	n1,525		C 12	N N		Ds		600	20	C	

State well number	Other numbers and source of data	Date of observation	Owner or user	Year completed	Depth of well (feet)	Type and diameter (inches)	Type of pump and power	Yield (gpm)	Use	Measuring point		Altitude of lsd (feet)	Water level below lsd (feet)	Other data
										Description	Distance above or below lsd (feet)			
T. 5 N., R. 12 E.--Continued														
51A-11A1	GS DGT	8- 6-64 1917	Leslie Salt Co.		71.5 60	C 16	N N	N N	Un	Tc	1.0	640	61.71	C
12B1	GS DWR-1X.	8- 6-64	Leslie Salt Co. California Salt Co.	1948	150.0 165	16	N N	15	Un In	Tc	3.0	630	42.93	C,W
11B2	GS	8- 6-64	Leslie Salt Co.			12	N N		Un	Bhc	1.0	630	45.0	
11P3	GS	8- 6-64	Leslie Salt Co.		151.5	12	N N		Un	Tc	1.0	630	42.75	
12B4	GS	8- 6-64	Leslie Salt Co.		141.0	p12	N N		Un	Tc	1.0	630	40.08	
11B5	GS	8- 6-64	Leslie Salt Co.			p12	T 5		In	Tap	2.65	621	(c)	
11H1	GS	8- 6-64	Leslie Salt Co. well 6			p16	L 1½		In	Tcc	.5	630	c 101.1	
11H2	GS	8- 6-64	Leslie Salt Co. well 5			16	L 1		In	Tcc	.34	632	c 101.26	
11Z1	GS DGT	8- 6-64 11-24-17			0 103.5	N D	N N		Ds Un			625	99.3	
12E4	GS	8- 6-64	Leslie Salt Co. well 4			p16	L 1½		In	Tcc	.4	635	50.55	
14E1	GS	8-13-64	Leslie Salt Co.		53.0	A 6	N N		Un	Lsd	0	605	15.85	
14L1	GS	8-18-64	Leslie Salt Co.		53.0	A 6	N N		Un	Lsd	0	605	1.70	
15E1	GS	8-13-64	Leslie Salt Co.		45.0	6	N N		Un	Lsd	0	601	16.94	
15G1	GS	8-13-64	Leslie Salt Co.		46.0	A 6	N N		Un	Lsd	0	600	0.70	
16F1	GS	8-13-64	Leslie Salt Co.		38.0	A 6	N N		Un	Lsd	0	601	14.19	
16W1	GS CDM	8-12-64 7- -39	Metropolitan Water Dist., hole 16	1939	0 50	N A 16	N N		Ds T			602	(w)	Lp
16R1	GS CDM	8-18-64 7- -39	Leslie Salt Co. Metropolitan Water Dist., hole 17	1939	3.0 50	A 16	N N		Ds T	Lsd	0	607	(a) (w)	Lp
17J1	GS	8-13-64			59.0	8	N N		Un	Lsd	0	601	11.81	
17Z2	GS	8-13-64	Leslie Salt Co.		26.0	D	N N		Un	Lsd	0	605	25.00	
20Q1	GS	8-28-64	Leslie Salt Co.		60.0	A 8	N N		Un	Lsd	0	602	8.65	
21G1	GS	8-13-64	Leslie Salt Co.		70.0	A 6	N N		Un	Lsd	0	601	16.11	

See footnotes at end of table.

State well number	Other numbers and source of data	Date of observation	Owner or user	Year completed	Depth of well (feet)	Type and diameter (inches)	Type of pump and power	Yield (gpm)	Use	Measuring point	Altitude of lsd (feet)	Water level below lsd (feet)	Other data
T. 5 N., R. 12 E.--Continued													
5/12-21HL	GS	8-18-64	Leslie Salt Co.		38.0	A 6	N N		Un	Lsd 0	600	20.17	
21QL	GS	8-13-64	Leslie Salt Co.		43.0	A 6	N N		Un	Lsd 0	601	13.24	
21RL	GS	8-13-64	Leslie Salt Co.		78.0	A 6	N N		Un	Lsd 0	601	15.51	
22HL	GS	8-19-64	Leslie Salt Co.		20.0	A 6	N N		Ds	Lsd 0	600	(a)	
22QL	GS	8-19-64	Leslie Salt Co.		40.0	A 6	N N		Un	Lsd 0	603	16.05	
22RL	GS	8-19-64	Leslie Salt Co.		70.0	A 6	N N		Un	Lsd 0	604	15.72	
23FL	GS	8-19-64	Leslie Salt Co.		18.0	A 6	N N		Ds	Lsd 0	602	(a)	
23QL	GS	8-18-64	Leslie Salt Co.		21.0	A 6	N N		Un	Lsd 0	604	12.61	
23RL	GS	8-18-64	Leslie Salt Co.		27.0	A 6	N N		Un	Lsd 0	604	13.03	
24EL	GS	8-18-64	Leslie Salt Co.		24.0	A 6	N N		Un	Lsd 0	605	14.28	
25ML	GS	8-19-64	Leslie Salt Co.		30.0	A 6	N N		Un	Lsd 0	604	11.58	
25VL	GS	8-19-64	Leslie Salt Co.		24.0	A 6	N N		Un	Lsd 0	605	11.62	Lp
26DL	GS CDM	8-12-64 7- -39	Leslie Salt Co. Metropolitan Water Dist., hole 18		0 50	N A 16	N N		Ds T		604		
26GL	GS	8-19-64	Leslie Salt Co.		20.0	A 6	N N		Ds	Lsd 0	604	(a)	
26ML	GS	8-19-64	Leslie Salt Co.		15.0	A 6	N N		Un	Lsd 0	603	12.69	
26NL	GS	8-19-64	Leslie Salt Co.		40.0	A 6	N N		Un	Lsd 0	603	16.71	
26PL	GS	8-19-64	Leslie Salt Co.		62.0	A 6	N N		Un	Lsd 0	604	23.66	
26RL	GS CDM	8-12-64 7- -39	Metropolitan Water Dist., hole 19		0 52	N A 16	N N		Ds T		605		Lp
29FL	GS	8-28-64	Leslie Salt Co.		7.0	A 6	N N		Ds	Lsd 0	600	(a)	
29PL	GS	8-18-64	Leslie Salt Co.		55.0	A 6	N N		Un	Lsd 0	597	8.21	
32FL	GS	8-19-64	Leslie Salt Co.		70.0	A 6	N N		Un	Lsd 0	595	10.23	
33KL	GS	8-13-64	Leslie Salt Co.		36.0	A 6	N N		Un	Lsd 0	595	9.53	
33ML	GS	8-13-64	Leslie Salt Co.		5.0	A 6	N N		Ds	Lsd 0	593	(a)	

See footnotes at end of table.

State well number	Other numbers and source of data	Date of observation	Owner or user	Year completed	Depth of well (feet)	Type and diameter (inches)	Type of pump and power	Yield (gpm)	Use	Measuring point		Altitude of lsd (feet)	Water level below lsd (feet)	Other data
										Description	Distance above or below lsd (feet)			
T. 5 N., R. 12 E.--Continued														
5/12-34K1	GS	8-13-64	Leslie Salt Co.		75.0	A 4	N N		Un	Tc 0	59	52.0		
34M1	GS	8-13-64	Leslie Salt Co.		46.0	A	N N		Un	Lsd 0	597	10.79		
34Z1	GS B	8-11-64 1952	Leslie Salt Co. California Salt Co. Bristol 1	1952	0 1,006	N	N N		Ds T		600			Lf
35E1	GS	8-13-64	Leslie Salt Co.		8.5	A 6	N N		Un	Lsd 0	600	7.8		
35J1	GS	8-15-64	Leslie Salt Co.		16.0	A 6	N N		Un	Lsd 0	601	12.35		
35K1	GS	8-13-64	Leslie Salt Co.		54.0	A 6	N N		Un	Lsd 0	602	11.27		
36D1	GS CDM	8-8-64 7- -39	Metropolitan Water Dist., hole 12		0 152	N A 16	N N		Ds T		605			Lp
36M1	GS	8-18-64	Leslie Salt Co.		30.5	8	N N		Un	Tc 0	603	13.13		
T. 5 N., R. 13 E.														
5/13-7R1	GS	8-12-64	Atchison, Topeka, and Santa Fe Railway, Bengal Station		0	N	N N		Ds		703			
8Z1	GS DGT	8-7-64 1910	Atchison, Topeka, and Santa Fe Railway Bolo well	1910	0 320	N	N N		Ds		712			
22G1	GS DGT	8-9-64 1917	Miller J. H. Chambless		52.0 60	4 4	N N L H		Ds Dm	Tc 1.0	646	(a) 54		
22J1	GS DWR-22X1 DWR-23X1	8-9-64	Miller J. H. Chambless		52.0 61	D 48	N N		Ds	Tc 4.0	646	(a)		C,W
22J2	GS	8-9-64			61.0	D 36	N N		Un	Tcc 1.0	646	52.80		
22Q1	GS	8-9-64			164.0		T N		Un	Tap 0	629	52.94		
29N1	GS CDM	8-13-64 7- -39	Metropolitan Water Dist., hole 6	1939	54	N A 16	N N		Ds T		606	30		Lp

State well number	Other numbers and source of data	Date of observation	Owner or user	Year completed	Depth of well (feet)	Type and diameter (inches)	Type of pump and power	Yield (gpm)	Use	Measuring point		Altitude of lsd (feet)	Water level below lsd (feet)	Other data
										Description	Distance above or below lsd (feet)			
<u>T. 5 N., R. 14 E.</u>														
5/14-15X1	GS	8-20-64	Atchison, Topeka, and Santa Fe Railway, Cadiz 1	1910	400	C (q)	T 10	167	RR	Tap	1.5	820	208.44	C, L, W
	0	1-22-29						60						
	0	1910												
	DWR-15X1													
15L1	GS	8-20-64	Atchison, Topeka, and Santa Fe Railway, Cadiz 2	1931	541	C (r)	T 10	20	RR	Tap	3.0	820	195.84	C, L, W
	DWR	5-10-54						425						
	0	2-----36						240						
	0	11-----32						390						
	0	6-----31												
	DWR-15X2													
<u>T. 5 N., R. 15 E.</u>														
5/15-4X1	GS	8-19-64	Atchison, Topeka, and Santa Fe Railway, Siam 1	1903	0	N	N N		Ds			1,040		
	0	6-21-03		1903	895	C 13	L	60	RR	Tc	1.0		399	C, L
	DWR-34X2													
	DWR-4X1													
	DWR-4B1													
	M-181													
4X2	GS	8-19-64	Atchison, Topeka, and Santa Fe Railway, Siam 2	1907	0	N	N N		Ds			1,080		L
	0	1915		1907	888	C 12		37	RR	Lsd	0		420	
	DWR-34X1													
	DWR-4X1													
	DWR-4B2													
	DWR-4X2													
	M-181													
7B1	GS	10-6-64			29.1	D 72	N N		Ds	Tc	0	1,520	(a)	
<u>T. 6 N., R. 6 E.</u>														
6/6-4G1	GS	8-4-64	U.S. Navy Sunshine Mill		0	N	N N		Ds			1,960		C
	DGT	11-27-17			125	D	E	30	In	Lsd	0		85	
20NS1	GS	8-5-64	U.S. Navy Peacock Spring					1	Un			2,630	(a)	
	W-24	1910							Dm				(s)	
	M-178	1908												

See footnotes at end of table.

State well number	Other numbers and source of data	Date of observation	Owner or user	Year completed	Depth of well (feet)	Type and diameter (inches)	Type of pump and power	Yield (gpm)	Use	Measuring point		Altitude of lsd (feet)	Water level below lsd (feet)	Other data
										Description	Distance above or below (feet)			
T. 6 N., R. 8 E.														
6/8-8G1	GS	7-29-64	Bagdad-Chase Mine		190.0	D 108	N N		Ds	Tc	1.0	2,425	(a)	
8G2	GS	7-29-64	Bagdad-Chase Mine		33.5	8	N N		Ds	Tc	3.5	2,480	(a)	
8G3	GS	7-29-64	Bagdad-Chase Mine		85.0	8	N N		Ds	Tc	4.0	2,480	(a)	
8G4	GS	7-29-64	Bagdad-Chase Mine		0	8	N N		Ds	Tc	4.0	2,500	(a)	
8G5	GS	7-29-64	Bagdad-Chase Mine		0	8	N N		Ds	Tc	4.0	2,480	(a)	
8G6	GS	7-29-64	Bagdad-Chase Mine		262.0	6	N N		Ds	Tc	0	2,490	(a)	
8G7	GS	7-29-64	Bagdad-Chase Mine		0	8	N N		Ds	Tc	5.5	2,490	(a)	
18Y1	GS	7-30-64							Ds			2,560	(a)	
T. 6 N., R. 11 E.														
6/11-9M1	GS	8-6-64			10.0	D 60	N N		Ds	Lsd	0	1,325	(a)	
10F1	GS 0 DWR-3X1	8-6-64 1917	Atchison, Topeka, and Santa Fe Railway	1915	23.0 681		N N		Ds	Lsd	0	1,400	(a) (a)	L
10M1	GS	8-6-64			15.0	D 96	N N		Ds	Tc	0	1,440	(a)	
30G1	GS	8-6-64	"Slim" Hartness	1940	154	8	S ½		Dm	Tc	1.0	760	127.91	C
30X1	GS	8-6-64	Atchison, Topeka, and Santa Fe Railway, Bagdad Well		0	N	N N		Ds			789		C, L
	0	3-4-02		1902	1,000	10		55	RR	Lsd	0		150	
T. 6 N., R. 12 E.														
6/12-26D1	GS	8-12-64			180.0	C	N N		Ds	Tc	2.0	1,080	(a)	
26D2	GS	8-12-64			40.0	C 22	N N		Ds	Tc	2.0	1,080	(a)	
29P1	GS 0 FC-1168	8-8-64 5-23-55	H. B. Burris, Amboy 1	1955	510	R 10	N N	103	Un	Tc	2.0	775	146.29	C, W
32R1	GS DWR	8-12-64	H. B. Burris, Amboy 6	1957	52.0 53	A 38	N N	6	Un Dm	Bhc	2.0	658	41.85 50	C

See footnotes at end of table.

State well number	Other numbers and source of data	Date of observation	Owner or user	Year completed	Depth of well (feet)	Type and diameter (inches)	Type of pump and power	Yield (gpm)	Use	Measuring point		Altitude of lsd (feet)	Water level below lsd (feet)	Other data
										Description	Distance above or below (-) (feet)			
T. 6 N., R. 12 E.--Continued														
6/12-35F1	GS DWR DWR DWR	8-12-64 3- 5-57 9-30-55 9-24-55	H. B. Burris, Amboy 2	1955	284	16	G		In	Tc	3.0	790	(b) c287 187.0	C
T. 6 N., R. 13 E.														
6/13-3A1	GS	8-14-64	Castle Mine		28.0	D 72	L H		Un	Tc	0	2,240	8.23	
3A2	GS	8-14-64	Castle Mine			D	Si Gr	.12	Un			2,240	(s)	
18L1	GS	8-18-64			49.5	D 96	N N		Ds	Tc	0	1,520	(a)	
31P1	GS	8-12-64			19.0	D 120	N N		Ds	Tcc	0	824	(a)	
36M1	GS	8-19-64	H. B. Burris			R	T N		Un	Tap	2.0	800	204.04	
36P1	GS GS	8-19-64 8-19-64	R. Tull	1960	449	R 12	S ½	13	Dm	Bhc	1.0	770	t162.65 c167.96	
T. 6 N., R. 14 E.														
6/14-31A1	GS	8-20-64	Frank McConnell	1924	154	12	S 3/4		Dm	Tcc	0	750	(f)	C
31J1	GS FC	10- 7-64 1-16-61	J. E. Easley	1960	270	12		12	Dm Dm			740		C
32E1	GS	8-20-64	Ruben Lomelli		280	R 8	J 1½		Dm	Tcc	1.0	735	123.61	C
32M1	GS	8-20-64	J. C. Limon	1961	248	8	S 5		Dm	Tap	2.0	722		
32M2	GS DWR-32F2	8-20-64	Leslie Sait Co.	1960	600		T 20	300	Ps			725		C
32N1	GS DWR DWR-5X1 DWR-32X1	8-19-64 5-10-54	J. M. Riddle	1933	655	C 10	T 20		Dm			715	160 130	C
32N2	GS	8-19-64	Whiting Bros. Service Station		300	6	S 1½		Dm			715		
32P1	GS	8-20-64	R. Haines	1964	d119.0		N N		Un	Tc	1.0	715	114.91	
34H1	GS	8-19-64			48.0	D 96	N N		Ds	Tc	0	1,080	(a)	

See footnotes at end of table.

State well number	Other numbers and source of data	Date of observation	Owner or user	Year completed	Depth of well (feet)	Type and diameter (inches)	Type of pump and power	Yield (gpm)	Use	Measuring point		Altitude of lsd (feet)	Water level below lsd (feet)	Other data
										Description	Distance above or below (feet)			
T. 7 N., R. 5 E.														
7/5-26K1	GS	8- 5-64	U.S. Navy, Mowry Mine		90.0	D 96	N N		Un	Tc	0	1,230	79.58	
28H1	GS	8- 5-64	U.S. Navy		60	D 60	N N		Ds			1,520	(a)	
35G1	GS	8- 5-64	U.S. Navy		60	D 60	N N		Ds			1,160	(a)	
T. 7 N., R. 6 E.														
7/6-14P1	GS CG	7-31-64 9-23-63	Inerto Co.	1963	0	R 6	N N N N		Ds Un	Lsd	0	1,870	55	L
26J1	GS DGT	8- 4-64 1917	U.S. Navy Sutter Well		72	D	N N	140	Ds			1,000	64	
29A1	GS	7-31-64	U.S. Navy		24.0	D 60	N N		Ds	Tc	1.0	1,690	(a)	
29A2	GS DGT SM	7-31-64 2- 5-18 1892	U.S. Navy		43.0 59.0 80	D 60 D	N N N N		Ds Un	Tc Tc	0 5.0	1,088	(a) 53	
T. 7 N., R. 7 E.														
7/7-1E1	GS 0	7-28-64 2-26-63	A. L. Murphy	1943 1943	0 500	C 8	N N		Ds			1,195	425	
2Z1	GS 0	7-28-64 2-26-63	Bagdad-Chase Mine			N	N N	140	Ds			1,130		
T. 7 N., R. 8 E.														
7/8-5L1	GS DWR	7-30-64 5-29-56	Camern Friend Chevron Gas Station		445.0 500	R 12	N N		Ds Dm	Tc	1.0	1,140	(a)	
5L2	GS	7-30-64	Camern Friend		0	D	N N		Ds			1,135		
8B1	GS 0 DWR-8Z1	7-30-64 1883	Southern Pacific Co.	1883	0 1,600	C 12	N N		Ds Un	Lsd	0	1,188	785	C,L
22Q1	GS	8- 4-64			117.0	D 60	N N		Ds	Tc	0	2,400	(a)	
33P1	GS	7-30-64			192.0	D 8	N N		Ds	Tc	3.0	2,111	(a)	
T. 7 N., R. 9 E.														
7/9-18G1	GS	8- 4-64	Dictator Mine 1		89.0	D 60	N N		Ds	Tc	1.0	2,020	(a)	

See footnotes at end of table.

State well number	Other numbers and source of data	Date of observation	Owner or user	Year completed	Depth of well (feet)	Type and diameter (inches)	Type of pump and power	Yield (gpm)	Use	Measuring point		Altitude of lsd (feet)	Water level below lsd (feet)	Other data
										Description	Distance above or below (-) lsd (feet)			
T. 7 N., R. 9 E.--Continued														
7/9-25Z1	GS O DWR-34X1	7-30-64 4-15-02	Atchison, Topeka, and Santa Fe Railway, Klondike Well	1902	0	C N	N N N		Ds Un		1,650	(a)		C,L
T. 7 N., R. 10 E.														
7/10-16P1	GS DGT	12-1-65	Trojan Station (site) Haynes Station (site)		0 867				Ds		1,080	267		
T. 7 N., R. 11 E.														
7/11-24B1	GS DGT	8-7-64 1917	Orange Blossom Mine	1915	80	D 120	N N	110	Ds Un	Tcc	1.0	2,920	(a) 565	
36K1	GS GS	12-9-64 12-9-64	W. A. Miller		6.0	D 72	Si Gr	7	Un	Tc	1.3	2,060	2.08 c2.15	C
T. 7 N., R. 13 E.														
7/13-33R1	GS	10-19-64			84.0	D 96	N N		Ds	Tc	0	2,080	(a)	
T. 8 N., R. 8 E.														
8/8-5M1	GS NHD	7-27-64 1915			51.0 600	C 8	N N		Ds	Tc	1.0	1,300	(a)	
6K1	GS SP	6-22-65	Well S-21		0 303		N N N N		Ds T			1,300		
8Q1	GS DGT	10-5-64 1917	Pacific Mine Corp.		68.0 400	D 60	N N		Ds	Tc	0	1,330	(a)	
8Q2	GS SP	6-22-65	Well S-38		0		N N		Ds T			1,328		
9B1	GS SP	6-22-65	Well S-19		0 332		N N		Ds T			1,415		
17H1	GS SP	6-22-65	Well S-18A		0 425		N N		Ds T			1,355		
17H1	GS SP	6-22-65	Well S-20		0 360		N N		Ds T			1,400		

See footnotes at end of table.

State well number	Other numbers and source of data	Date of observation	Owner or user	Year completed	Depth of well (feet)	Type and diameter (inches)	Type of pump and power	Yield (gpm)	Use	Measuring point		Altitude of lsd (feet)	Water level below lsd (feet)	Other data
										Description	Distance above or below lsd (feet)			
<u>T. P. N., R. 7 E.</u>														
97-1361	GS	7-27-64			89.0	D 54	N N		Ds	Tc 0	1,300	(a)		
	LGT	11-27-17			115	D			Un			103		
	MHD	1889			90				Un			(u)		
1361	GS	7-27-64			2.5	D 96	N N		Ds		1,296	(a)		
<u>T. P. N., R. 8 E.</u>														
97-1871	GS	7-27-64			43.0	D	N N		Ds	Tc -3.0	1,298	(a)		
	DGT	1917			65							(a)		
	MHD	1889			60							(u)		
3161	GS	6-22-65			28.0	12	N N		Ds	Lsd 0	1,300			
a.	Dry.													m. Some mud.
b.	No access into casing.													n. Reported to have struck bedrock.
c.	Well being pumped.													p. Well constructed with 8-inch casing installed inside larger casing with gravel pack installed between the two casings.
d.	Well being drilled at time of visit; not yet completed.													q. Well constructed with 10-inch casing installed inside 12-inch casing.
e.	Two wells numbered ID.													r. Well constructed with 12-inch casing installed inside 20-inch casing.
f.	Tape smeared.													s. Flowing.
g.	Well cored with 2-5/8-inch core barrel for total depth of hole; no casing installed in hole.													t. Well pumped recently.
h.	Inclined shaft, depth estimated.													u. Well contained water but was not measured.
j.	Horizontal shaft.													v. Well sanded up during pumping test.
k.	Part of drain system for collection of brine. Drain intersects water table.													w. No water encountered when hole drilled.

APPENDIX B

TABLE 2. RECORDS OF WATER LEVELS IN WELLS



Table 2.--Records of water levels in wells

Table 2 includes all records of water-level measurements made in wells for which five or more measurements were made; if fewer than five measurements were made, the records are given in table 1.

Altitudes are for the land-surface datum at the well and are in feet above mean sea level. Land-surface datum is a plane of reference which approximates land surface. Altitudes given in whole feet were interpolated from topographic maps. Altitudes that were given in feet and tenths of a foot were determined by spirit leveling.

Depths of wells, given in whole feet, were reported by owners or taken from drillers' logs; depths given in feet and tenths of a foot were measured from land-surface datum by the Geological Survey.

Date	Water level	Date	Water level	Date	Water level
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2N/17E-22A1. Depth 0 ft October 20, 1964. Altitude 615.4 ft. All measurements by Metropolitan Water District except as indicated.

Jan. 11, 1948	8.11	Apr. 28, 1948	a8.10	Sept. 16, 1948	7.80
Jan. 12	8.25	Apr. 29	a8.39	Sept. 20	7.85
Jan. 12	8.26	Apr. 30	a8.26	Sept. 28	7.84
Jan. 13	8.10	Apr. 30	a8.33	Oct. 1	7.83
Jan. 13	8.18	May 1	a8.46	Oct. 8	7.80
Jan. 15	7.96	May 1	8.42	Oct. 12	7.90
Jan. 18	7.85	May 4	8.10	Oct. 17	7.95
Jan. 21	7.95	May 6	8.12	Nov. 1	7.92
Jan. 23	7.85	May 11	8.05	Nov. 2	8.15
Jan. 25	7.78	May 17	8.05	Nov. 3	7.94
Jan. 28	7.93	May 21	8.04	Nov. 10	7.90
Feb. 3	7.93	May 27	8.03	Nov. 16	7.89
Feb. 8	7.95	May 28	a8.33	Nov. 24	7.89
Feb. 17	7.89	May 29	a8.46	Dec. 2	8.00
Feb. 20	7.88	May 30	a8.56	Dec. 7	8.00
Mar. 11	8.00	June 4	8.16	Dec. 8	8.03
Mar. 19	7.96	June 12	8.15	Dec. 9	8.26
Apr. 13	7.98	June 12	8.09	Dec. 19	8.10
Apr. 13	8.04	June 23	8.08	Dec. 28	8.10
Apr. 14	8.28	June 25	a8.11	Dec. 29	8.35
Apr. 14	8.28	June 26	a8.46	Jan. 6, 1949	8.10
Apr. 15	8.36	June 27	a8.57	Jan. 21	6.85
Apr. 15	8.35	July 1	8.12	Feb. 10	6.20
Apr. 16	8.43	July 7	8.11	Feb. 15	6.26
Apr. 16	8.40	July 13	8.15	Feb. 22	6.26
Apr. 17	8.46	July 15	8.41	Mar. 5	6.34
Apr. 17	8.45	July 22	8.17	Mar. 11	6.35
Apr. 18	8.51	Aug. 3	7.81	Mar. 18	6.40
Apr. 18	8.49	Aug. 6	8.19	Mar. 24	6.44
Apr. 19	8.56	Aug. 12	7.86	Apr. 1	6.40
Apr. 19	8.50	Aug. 18	7.78	Apr. 6	6.48
Apr. 20	8.58	Aug. 23	a7.80	Apr. 12	6.42
Apr. 20	8.40	Aug. 24	b8.03	Apr. 13	6.71
Apr. 21	8.29	Aug. 25	a8.11	Apr. 18	6.44
Apr. 22	8.20	Aug. 26	7.92	Apr. 27	6.45
Apr. 23	8.17	Sept. 6	7.76	Oct. 20, 1964	(i j)
Apr. 27	8.12				

See footnotes at end of table.

Date	Water level	Date	Water level	Date	Water level
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2N/17E-23D1. Depth unknown. Altitude 623.9 ft. All measurements by Metropolitan Water District except as indicated.

Jan. 8, 1948	16.23	Apr. 15, 1948	a18.45	July 1, 1948	16.60
Jan. 10	16.23	Apr. 16	a18.54	July 7	16.58
Jan. 10	a16.94	Apr. 16	a18.40	July 13	16.55
Jan. 10	a17.36	Apr. 17	a18.49	July 22	16.61
Jan. 10	a17.48	Apr. 17	a18.40	July 30	16.35
Jan. 10	a17.54	Apr. 18	a18.52	Aug. 3	16.30
Jan. 10	a17.57	Apr. 18	a18.40	Aug. 6	a18.11
Jan. 10	a17.56	Apr. 19	a18.55	Aug. 12	16.33
Jan. 10	a17.69	Apr. 19	a18.39	Aug. 18	16.27
Jan. 10	a17.73	Apr. 20	a18.50	Aug. 23	16.29
Jan. 10	a17.75	Apr. 20	16.85	Aug. 23	a16.23
Jan. 10	a17.85	Apr. 21	16.71	Aug. 24	a17.80
Jan. 10	a17.80	Apr. 22	16.65	Aug. 25	a17.78
Jan. 11	a18.2	Apr. 23	16.58	Aug. 26	16.44
Jan. 11	b17.8	Apr. 27	15.12	Sept. 6	16.24
Jan. 11	a18.28	Apr. 28	16.56	Sept. 16	16.30
Jan. 12	a18.41	Apr. 28	a18.17	Sept. 17	a17.27
Jan. 12	b17.42	Apr. 30	a18.00	Sept. 20	16.34
Jan. 13	16.55	Apr. 30	a18.30	Sept. 28	16.30
Jan. 13	a17.59	May 1	16.89	Oct. 1	16.30
Jan. 13	a18.25	May 4	16.55	Oct. 3	16.32
Jan. 15	16.39	May 6	16.55	Oct. 8	16.30
Jan. 18	16.25	May 11	16.55	Oct. 12	16.35
Jan. 21	16.34	May 17	16.47	Oct. 17	16.40
Jan. 23	16.30	May 21	16.43	Nov. 1	16.40
Jan. 25	16.20	May 27	16.46	Nov. 3	16.41
Jan. 29	16.33	May 27	a17.71	Nov. 10	16.35
Feb. 3	16.32	May 27	a17.75	Nov. 16	16.38
Feb. 8	16.36	May 28	a18.35	Nov. 24	16.37
Feb. 17	16.34	May 29	a18.47	Dec. 2	16.45
Feb. 20	16.29	May 30	a18.57	Dec. 7	16.45
Mar. 11	16.40	June 4	16.57	Dec. 8	16.49
Mar. 19	16.36	June 12	16.53	Dec. 19	16.55
Apr. 13	16.46	June 18	16.48	Dec. 28	16.56
Apr. 13	a18.05	June 23	16.51	Dec. 29	b17.78
Apr. 14	a18.48	June 25	16.57	Jan. 6, 1949	16.55
Apr. 14	b15.90	June 26	a18.29	Jan. 21	15.45
Apr. 14	a18.40	June 27	a18.40	Feb. 10	14.75
Apr. 15	a18.51	June 27	b17.20	Feb. 15	14.81
				Feb. 22	14.84

See footnotes at end of table.

Date	Water level	Date	Water level	Date	Water level
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2N/17E-23D1--Continued

Mar. 5, 1949	14.86	Dec. 2, 1963	a25.42	Mar. 4, 1964	a27.08
Mar. 11	14.85	Dec. 5	a27.00	Mar. 19	a26.75
Mar. 18	14.84	Dec. 6	a26.83	Mar. 21	a28.08
Mar. 24	14.95	Dec. 10	23.50	Apr. 5	a27.33
Apr. 1	14.93	Dec. 17	a27.00	Apr. 20	a28.08
Apr. 6	14.98	Dec. 19	a27.00	Apr. 21	25.75
Apr. 12	14.92	Dec. 28	24.00	May 1	a27.50
Apr. 13	a15.10	Dec. 29	a26.67	May 7	a28.83
Apr. 18	14.98	Jan. 15, 1964	a25.25	May 12	24.75
Apr. 27	14.96	Jan. 23	24.00	May 25	24.50
Apr. 28	15.00	Jan. 26	a26.83	June 11	a28.83
May 3	14.98	Feb. 5	a26.67	June 15	a29.83
Nov. 20, 1963	22.18	Feb. 11	25.00	June 23	27.00
Nov. 27	23.18	Feb. 20	24.18	Aug. 21	a k j 18.0
Dec. 1	23.25				

2N/17E-23E1. Depth unknown. Altitude 614.2 ft. All measurements by Metropolitan Water District except as indicated.

Apr. 13, 1948	6.85	Apr. 28, 1948	6.95	Jan. 6, 1949	6.95
Apr. 13	6.86	Apr. 29	7.10	Apr. 12	5.30
Apr. 14	6.98	Apr. 30	7.03	Nov. 20, 1963	15.03
Apr. 14	6.97	May 1	7.10	Nov. 27	a15.95
Apr. 15	7.02	May 4	6.95	Dec. 1	a16.12
Apr. 15	7.02	May 6	6.95	Dec. 2	a16.45
Apr. 16	7.06	May 17	6.91	Dec. 5	a16.95
Apr. 16	7.06	May 21	6.91	Dec. 6	16.03
Apr. 17	7.06	May 27	6.79	Dec. 10	15.87
Apr. 17	7.08	May 28	7.02	Dec. 17	a17.20
Apr. 18	7.10	May 29	7.12	Dec. 19	16.20
Apr. 18	7.10	June 4	6.98	Dec. 28	15.62
Apr. 19	7.15	June 12	6.95	Dec. 29	a17.20
Apr. 19	7.13	June 18	6.93	Jan. 5, 1964	15.70
Apr. 20	7.13	June 23	6.95	Jan. 23	a17.12
Apr. 20	7.10	June 27	7.10	Jan. 26	a17.70
Apr. 21	7.05	July 7	6.95	Feb. 5	a17.87
Apr. 22	7.00	July 22	6.96	Feb. 11	16.53
Apr. 23	6.96	Oct. 8	6.80	Feb. 20	15.87
Apr. 27	6.95	Dec. 2	6.86	Mar. 4	15.87

See footnotes at end of table.

Date	Water level	Date	Water level	Date	Water level
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2N/17E-23E1--Continued

Mar. 19, 1964	a17.37	Apr. 21, 1964	a18.37	June 11, 1964	a21.20
Mar. 21	a17.95	May 1	a18.20	June 15	a22.03
Apr. 5	16.28	May 7	a18.45	June 23	19.03
Apr. 20	a18.37	May 25	18.03	Aug. 21	j k20.1

5N/12E-11B1. Depth 150.0 ft. Altitude about 630 ft. All measurements by California Department of Water Resources except as indicated.

May 10, 1954	a57.2	May 25, 1956	61.3	May 23, 1958	51.8
May 23, 1955	68	May 14, 1957	56.0	Aug. 6, 1964	j42.98
Sept. 30	65				

5N/13E-22J1. Depth 52.0 ft. Altitude about 646 ft. All measurements by California Department of Water Resources except as indicated.

May 10, 1954	50.8	May 14, 1957	52.0	Aug. 9, 1964	(f j)
May 23, 1955	50.9	May 22, 1958	51.0		

5N/14E-15K1. Depth 400 ft on Aug. 24, 1910. Altitude about 820 ft. All measurements by California Department of Water Resources except as indicated.

Aug. 24, 1910	m220	Jan. 22, 1929	a n228	Sept. 15, 1954	213.4
Aug. 24	a m260	May 10, 1954	212.0	Aug. 20, 1964	j208.44
Jan. 22, 1929	n208				

5N/14E-15L1. Depth 541 ft on July 10, 1931. Altitude about 820 ft. All measurements by California Department of Water Resources except as indicated.

June 30, 1931	m207	May 25, 1956	226.2	May 17, 1959	210.5
June 30	a m214	Oct. 18	217.5	May 16, 1960	208.3
May 23, 1955	206.2	May 14, 1957	206.0	May 13, 1961	210.2
Sept. 30	215.2	May 23, 1958	206.0	Aug. 20, 1964	j195.84

See footnotes at end of table.

Date	Water level	Date	Water level	Date	Water level
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6N/12E-29P1. Depth 510 ft in 1955. Altitude about 775 ft. All measurements by California Department of Water Resources except as indicated.

Dec. 30, 1954	p144	Oct. 17, 1956	146.8	May 17, 1959	147.0
Apr. 30, 1955	144	May 14, 1957	146.7	May 17, 1960	147.9
Sept. 30	144.9	May 24, 1958	147.0	Aug. 8, 1964	j146.29
May 25, 1956	146.1				

- a. Well being pumped.
- b. Well pumped recently.
- f. Dry.
- i. Well destroyed.
- j. Measurement by U.S. Geological Survey.
- k. Tape smeared.
- m. Measurement by driller.
- n. Measurement by Atchison, Topeka, and Santa Fe Railway.
- p. Measurement by San Bernardino County Flood Control District.

APPENDIX C

TABLE 3. CHEMICAL ANALYSES OF WATER FROM WELLS

Well number	Date of collection	Depth of well (feet)	Water temperature (°F)	Results in parts per million (ppm) or in milligrams per liter (mg/l)													pH	Specific conductance (micromhos at 25°C)	Analyzing laboratory and sample number					
				Silica (SiO ₂)	Iron (Fe)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO ₃)	Carbonate (CO ₃)	Sulfate (SO ₄)	Chloride (Cl)	Fluoride (F)	Nitrate (NO ₃)	Boron (B)				Calculated (Sum of determined constituents)	Residue on evaporation at 180°C	Hardness as CaCO ₃	Noncarbonate hardness as CaCO ₃	Percent sodium
U. S. Public Health Service drinking-water standards (1962)																								
5N/13E-2201	5-10-54 5-23-55 5-14-57 5-23-58		72 66 68	0.3	92 75 38 59	16 18 10 12	281 264 134 178	4.4 4.0 2.9 3.1	277 273 267 282	0	112 90 41 72	250 394 364 111 200	0.9 1.0 1.4 1.0 0.8	45 24 18 0	0.5 0.48 0.33 0.3	1,060 969 947 718	500 1,130 1,020 547 788	279 261 134 199	67 68 68 66	1,940 1,560 836 1,210	7.5 7.6 7.4 8.0	DWR-P522 DWR-5761 DWR-7870 DWR-R2063		
5N/14E-15K1	8-15-10 6-26-30 5-23-55 9-30-55 5-23-56 5-14-57 5-23-58 5-17-59 5-13-60 5-20-63 5-11-64		82 82 82 82 88 87		18 35 26 26 26	18 5.1 10 10 10	65 72 54 54 54	5.1 2.5 2.5 5.1	136 134 132 88 138	0	72 88 39 37 38	50 48 47 47 47	1.0 1.4 1.4 1.0	12 20 22 12	0.17	292 313 266 264 299	289 298 290 350 286	107 109 106 108 105 105	54 59 51 51 51	1,940 1,560 836 1,210	7.6 7.8 7.6 7.6 7.6 7.6 7.6 7.6 7.6 7.6 7.6	RR-108514 RR-309314 DWR-5760 DWR-6144 DWR-7007 DWR-7869 DWR-R2064 DWR-R2552 DWR-11479 DWR-12659 DWR-15606 DWR-16789		
15L1	2-19-32 5-16-54 9-15-54 10-18-56 9-14-58 5-24-62		82 82 88 87		42 28 29 25 30	5.1 9 11 8 8	69 55 54 55 53	5.1 5.6 5.3 4.7	142 134 128 133 134 143	0	79 40 39 34 36	54 58 41 50 50 45	1.0 1.0 1.0 0.7 1.1	2.5 19 12 15	0.35 0.35 0.6 0.34	319 339 295 302 303	300 339 295 332 316	125 107 116 105 109	54 52 49 52 50	1,940 1,560 836 1,210	7.9 8.0 8.0 7.8 8.2	RR-32802 DWR-P540 DWR-R385 DWR-7395 DWR-R2546 DWR-2767		
5N/15E-4X1	9-26-03		27		19	5.4	73	14.8	148	0	51	38		9		286	334	270	86				DGT-487	
6N/6E-4G1	11-27-17	125	48	0.33	50	7.4	494	17	88	0	547	349		9		1,560	1,680	155	66					
6N/11E-30G1	5- 8-53 5- 8-53				477 513	32 15	1,200 1,200	24 23	22 15	0 0	284 225	2,720 2,610	2.6 3.0	3.5 5	2.6	4,750 4,600	4,910 5,320	1,320 1,340	1,300 1,330	66	7,920 7,920	7.0 6.8	FC-2645 FC-2665	
30X1	12- -01 5- 2-02	1,000			820 771	6.1 4.7	1,580 1,520		409 351	0 0	1,050 1,080 944	3,600 3,460				6,420 6,110	2,080 1,940	62 1,940						RR- RR- FC-3377 FC-3523 DWR-5757 DWR-6158 DWR-7132
6N/12E-29P1	12-30-54 14-25-55 5-23-55 9-30-55 5-25-56		89 82 86		320 364 305 156	9 2 2 15	840 1,000 925 800	15 17 15 11	71 41 49 80 10	0 0 0 0	1,050 1,080 944 551	1,120 1,430 1,300 1,270 1,150	4.0 4.4 6 4.2 3.2	5.5 7 8.4 14	3.9 3.9 4.2 3.2	3,400 3,940 3,530 2,710	3,500 3,990 3,600 2,790	837 917 769 737 452	68 70 72 79	5,350 6,130 5,210 5,180 4,130	7.8 7.9 7.9 7.9 5.8			
	5-14-57 5-24-58 5-17-59 5-17-60		86 86 89 89		86 6 389	1 0 6	840 855 828	12 18 17	29 32 49 256	0 15 12 0	347 50 1,650	1,200 1,290 1,300 493	2.5 5.9 1.0	5.5 1.6 120	3.6 2.8 5.5	2,510 2,270 3,670	2,540 2,210 3,560	218 36 15 96	89 98 98 64	4,220 4,130 4,320 1,000	6.3 7.9 8.9 9.1	DWR-8071 DWR-R2061 DWR-R2559 DWR-R3233		
32R1	7-13-57		83		389	6	828	17	256	0	1,650	493	1.0	120	5.5	3,670	3,560	96					DWR-T877	

See footnotes at end of table.

Well number	Date of collection	Depth of well (feet)	Water temperature (°F)	Results in parts per million (ppm) or in milligrams per liter (mg/l)													Specific conductance (microhos at 25°C)	DM	Analyzing laboratory and sample number							
				Silica (SiO ₂)	Iron (Fe)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO ₃)	Carbonate (CO ₃)	Sulfate (SO ₄)	Chloride (Cl)	Fluoride (F)	Nitrate (NO ₃)	Boron (B)				Calculated (sum of determined constituents)	Residue on evaporation at 180°C	Hardness as CaCO ₃	Noncarbonate hardness as CaCO ₃	Percent sodium		
U.S. Public Health Service drinking-water standards (1982)																										
6N/12B-35F1	1-9-55	284		22	0.3	200	24	883					250	250	0.9	45		500	500	3,110	3,140	600		4,900	7.9	SE
	9-30-55	284	46			214	3	590	19		67	0	749	1,200	4.0	4.0		2,940	2,930	3,539	539	69	3,500	8.1	DMR-6137	
	10-18-56	284	86			146	2	735	21		29	0	321	1,070	4.8	12		2,570	2,820	1,977	197	76	1,420	7.7	DMR-734A	
	3-3-57	284				219	2.5	660	18		40	0	376	1,170	3.6	3.0		2,450	2,700	549	514	72	4,170	7.6	FC-1065	
	5-24-57	284	84			213	2	642	19		42	0	380	1,140	3.6	10		2,390	2,550	540	71	71	3,980	7.0	DMR-7872	
	9-4-58	284	84			213					23	0	358	1,090	3.6			1,300	1,930	130			3,930	7.7	DMR-R2056	
	5-17-59	284	87			222	1	605	28		32	0	310	1,120	4.2	2.5		2,340	2,420	557	531	69	3,140	6.8	DMR-9449	
	9-10-59	284	86			224	2.9	663	18		27	0	306	1,110	3.8	3.0		2,480	2,660	571	217	71	4,070	7.9	DMR-R2805	
	6-17-60	284	86			224					27	0		1,220									4,100	7.6	DMR-12669	
	5-13-61	284	85			225	12	640	18		29	0	309	1,160	2.8	0		2,440	2,860	613	593	69	4,000	7.7	DMR-2757	
	5-20-62	284	86			230	1.3	750	23		18	0	322	1,310	3.0	0		3,670	3,100	593	578	72	4,200	6.4	DMR-L4490	
	6-3-64	284	88			230	36	720	22		21	0	313	1,380	3.0	0		2,740	2,830	725	708	68	4,000	7.5	DMR-L6788	
6N/14B-31A1	1-18-61	154		36		28	5	70	5.1		156	0	39	49	1.8	13		288	342	93	0	61	514	7.8	FC-5927	
	5-13-64	154		36		29	6.3	74	5.5		53	0	42	53	2.0	11		285	332	98	0	60	500	8.1	DMR-L6775	
31W1	1-16-61	270		32		18	5	72	5.3		142	0	35	45	1.9	8.6		261	297	64	0	62	455	8.0	FC-5928	
	5-13-64			32		26	4.9	67	5.2		134	0	39	55	2.0	12		310	320	84	0	68	450	7.8	DMR-L6784	
32E1	4-2-62			29		22	6	66	5.5		146	0	32	39	2.2	18		284	284	82	0	62	449	8.0	FC-6575	
	5-12-64			29		22	7.1	62	5.1		145	0	34	35	2.0	15		282	288	83	0	60	430	8.1	DMR-L6780	
32M2	5-17-60	600		41		19	6	74	5.1		143	0	37	46	2.4	17		318	290	73	0	67	482	7.9	DMR-R3247	
	9-20-60	600		20		7	5	70	7.2		98	4	20	64	4.7	0		250	320	35	0	80	447	9.9	DMR-L294	
	5-13-61	600		33		16	4.6	83	4.9		144	0	44	50	3.0	12		325	318	67	0	71	508	8.3	DMR-12628	
	5-25-62	600		33		20	6	78	5		143	0	55	47	2.5	12		329	336	76	0	68	510	8.2	DMR-2734	
	5-20-63			39		19	5.5	80	5.4		146	0	39	43	2.9	12		320	320	63	0	71	508	8.1	DMR-L5508	
	5-11-64			33		16	4.6	83	4.9		144	0	44	50	3.0	12		325	318	67	0	71	508	8.1	DMR-L6781	
32N1	5-10-54			91		22	8.1	89	5.5		141	0	51	74	3.6	14		337	414	89	0	67	585	8.0	DMR-P533	
	9-15-54			91		25	3	98	5.9		137	0	54	73	1.4	13		341	365	74	0	72	602	7.6	DMR-R383	
	5-23-55			91		23	5	92	5.6		134	0	50	69	5.0	9.4		325	355	78	0	70	627	8.0	DMR-5759	
	9-30-55			25		13	4	88	4.8		144	0	48	72	4.0			315	300	49	0	78	467	7.7	DMR-6143	
	5-23-56			25		13	4	88	4.8		122	0	48	67	4.0	1.0		315	300	49	0	78	467	7.7	DMR-7118	
	10-17-56			35		18	7	91	5.1		137	0	53	69	4.0	7.8		357	384	75	0	71	596	7.3	DMR-7394	
	5-14-57			93		22	8	96	5.2		143	0	70	71	2.5	8.2		383	380	88	0	69	590	7.7	DMR-11263	
	5-23-58			37		24	3.8	93	4.5		139	0	50	69	2.8	8.0		360	376	75	0	72	578	8.1	DMR-L1263	
	9-4-58			24		20	7.4	88	5.6		139	0	50	66	4.0	9.0		342	386	80	0	69	590	8.2	DMR-2777	
	5-17-59			25		25	3.9	94	5.4		142	0	55	75	2.8	8.6		376	374	78	0	71	570	8.1	DMR-L4488	
	5-16-60			36		30					142	0	55	75	2.8	8.6		376	374	78	0	71	570	8.1	DMR-L6787	
	5-13-61			30		22	8	96	5.2		143	0	70	71	2.5	8.2		383	380	88	0	69	590	7.7	RR1/RR2	
	5-24-62			37		24	3.8	93	4.5		139	0	50	69	2.8	8.0		360	376	75	0	72	578	8.1	RR1/RR2	
	5-20-63			24		20	7.4	88	5.6		139	0	50	66	4.0	9.0		342	386	80	0	69	590	8.2	RR1/RR2	
	5-11-64			36		25	3.9	94	5.4		142	0	55	75	2.8	8.6		376	374	78	0	71	570	8.1	RR1/RR2	
7N/8B-8B1	1883	(d)		31		31	4.3	441	5.3		593	0	357	136	1.4	16		1,260	446	105	0	68	690	7.8	DMR-L6800	
7N/9B-2521	4-15-02			30		30	7.2	110	5.3		205	0	82	56	1.4	16		441	446	105	0	68	690	7.8	DMR-L6800	
7N/11B-36X1	6-5-64			31		30	7.2	110	5.3		205	0	82	56	1.4	16		441	446	105	0	68	690	7.8	DMR-L6800	

1. Analysis calculated by the Geological Survey from hypothetical combinations.
2. Analysis also indicates 393 ppm strontium (Sr).
d. Water sample collected from 785-foot depth.
e. Water sample collected from 1,048-foot depth.

APPENDIX D

TABLE 4. DRILLERS' LOGS OF WELLS

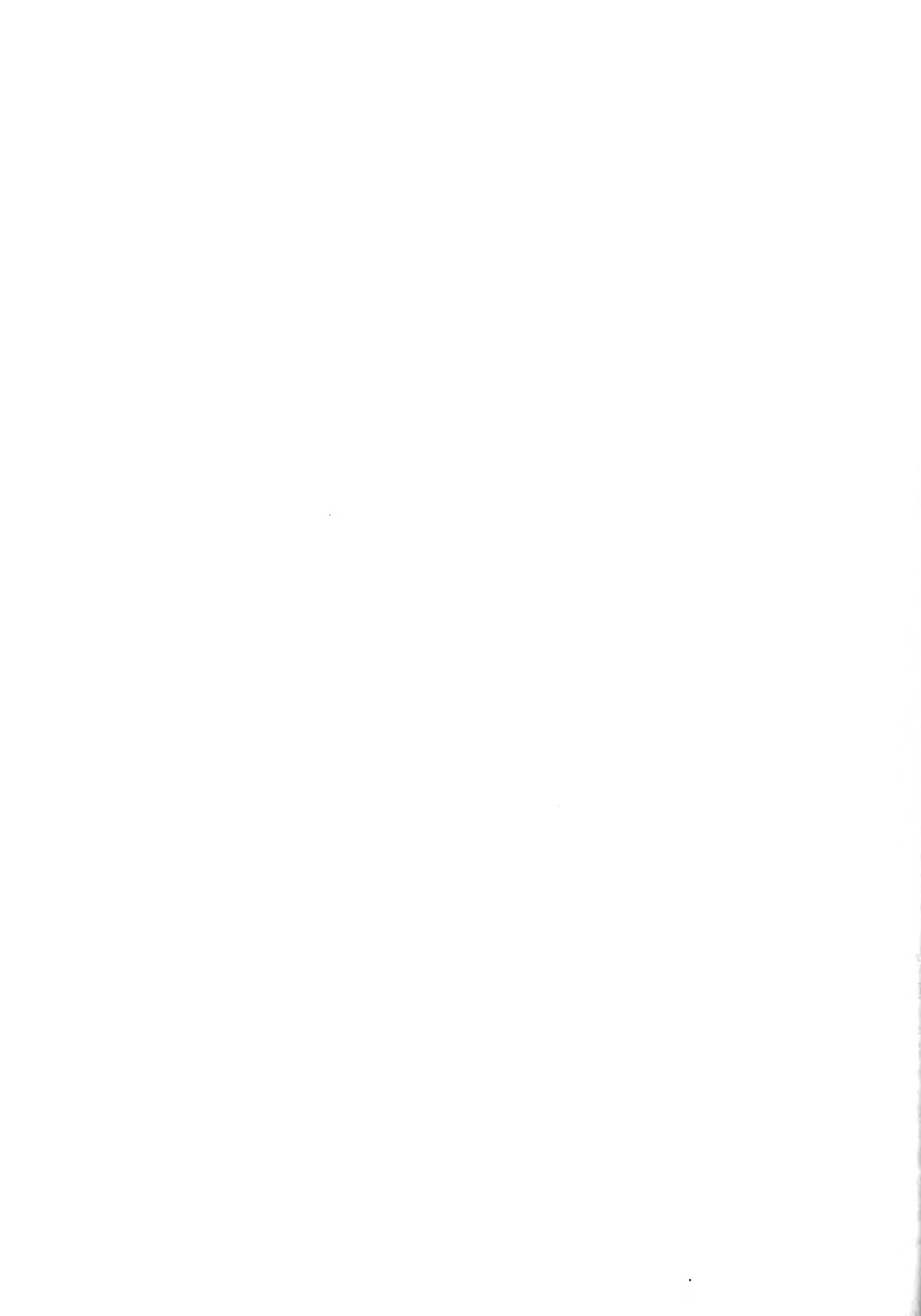


Table 4.--Drillers' logs of wells

Where the depth given in the log table differs from that given in table 1, it indicates the well has been measured since it was drilled. The depth given in table 1 is a measured depth on the date indicated. The depth given in table 4 is the depth reported by the driller and is not necessarily the developed depth of the well.

	Thickness (feet)	Depth (feet)		Thickness (feet)	Depth (feet)
--	---------------------	-----------------	--	---------------------	-----------------

1S/18E-13L1. Drilled by C. A. Tomson. 16-inch casing 0-558.5 ft, perforated 241-259 ft, 327-365 ft, and 379-381 ft. Altitude 827.5 ft. Well filled to 370 ft from surface on 2-2-33 during pumping test.

"Blow" sand -----	3	3	Conglomerate, hard ---	17	379
Granite, decomposed --	47	50	Clay and silt -----	69	448
Sand, cemented -----	115	165	Silt -----	20	468
Clay, red -----	41	206	Clay, gray -----	23	491
Sand, cemented -----	54	260	Sand, cemented -----	6	497
Clay -----	70	330	Clay, gray -----	12	509
Sand and gravel, cemented -----	32	362	Clay, blue and hard --	49.5	558.5

2N/17E-16A1. 12-inch casing to 105 ft, perforated 65-105 ft. Altitude about 650 ft.

Clay, sandy, with gravel -----	20	20	Gravel, coarse -----	2	65
Gravel, coarse -----	2	22	Sand, cemented and gray -----	5	70
Clay, sandy -----	10	32	Gravel, coarse and cemented -----	2	72
Gravel, coarse -----	2	34	Clay -----	15	87
Clay, sandy, with concretions -----	6	40	Clay, sandy -----	8	95
Gravel -----	2	42	Sand, fine -----	5	100
Clay, sandy -----	8	50	Clay, blue -----	5	105
Sand with gravel -----	13	63			

Thickness Depth		Thickness Depth	
(feet)	(feet)	(feet)	(feet)

2N/18E-35H1. Drilled by Arizona and California Railway Co.
 10-inch casing 0-121 ft, 5-inch casing 0-66.5 ft, 4-inch casing 0-75.5 ft, perforations unknown. Altitude about 625 ft.

Clay -----	60	60	Sand, fine -----	20	110
Sand, clay, and gravel, cemented ---	30	90	Gravel -----	11	121

2N/18E-35H2. Drilled by E. C. Kurtz. 12-inch casing 0-307.5 ft,
 10-inch casing 0-59⁴ ft, perforated 312-325 ft. Altitude about 625 ft.

Soil -----	40	40	Sand, yellow -----	20	295
Clay, yellow -----	30	70	Clay, yellow -----	17	312
Clay, sandy -----	10	80	Sand and gravel -----	13	325
Clay, yellow -----	60	140	Clay, yellow -----	20	345
Silt, brown; and sand-	35	175	Sand, yellow -----	65	410
Clay, yellow -----	50	225	Clay, yellow -----	35	445
Sand, black -----	10	235	Sand, yellow -----	70	515
Clay, blue -----	25	260	Sand, blue -----	25	540
Clay, yellow -----	15	275	Clay, blue -----	63.5	603.5

2N/18E-35H3. Drilled by Roscoe Moss Drilling Co. 12-inch casing
 0-450 ft, perforated 325-440 ft. Altitude about 626 ft.

Clay -----	184	184	Clay, sandy and yellow -----	120	350
Clay, blue -----	46	230	Clay -----	100	450

4N/15E-24E1. Drilled by Arizona and California Railway Co.
 10-inch casing 0-272 ft, 8-inch casing 0-330 ft, open hole 330-340 ft,
 perforated 290-330 ft. Altitude about 850 ft.

Gravel, coarse; and sand -----	280	280	Gravel, fine, and sand -----	50	330
			Gravel, cemented -----	10	340

Thickness Depth		Thickness Depth	
(feet)	(feet)	(feet)	(feet)

5N/12E-5Z1. 12-inch casing reduced to 6-inch casing. No lengths given. Altitude about 639 ft.

No record -----	1,500	1,500	Bedrock -----	25	1,525
-----------------	-------	-------	---------------	----	-------

5N/14E-15K1. Drilled by L. A. Clampitt Co. 12-inch casing 0-300 ft, 10-inch casing 0-400 ft, open hole 400-425 ft. Altitude about 820 ft.

Gravel, cemented -----	210	210	Sand -----	100	360
Gravel and sand -----	50	260	Sand, cemented -----	65	425

5N/14E-15L1. Drilled by A. F. Fulkerson Co. 20-inch casing 0-207 ft, 12-inch casing 0-541 ft, perforated 214-280 ft and 490-535 ft. Altitude about 820 ft.

Sand -----	3	3	Sand, clay, and gravel -----	64	406
Sand and gravel, hard-	32	35	Sand, cemented -----	8	414
Sand, shaly; and clay-	14	49	Gravel, large -----	12	426
Sand and gravel, cemented -----	12	61	Clay, white -----	3	429
Sand and clay -----	9	70	Sand, fine -----	6	435
Gravel, dry and large-	15	85	Sand, hard and cemented -----	4	439
Sand and rocks -----	100	185	Sand, fine -----	5	444
Sand, cemented -----	3	188	Clay, yellow -----	6	450
Clay, sandy; and gravel -----	26	214	Gravel and sand -----	10	460
Sand, coarse -----	9	223	Clay and sand -----	8	468
Sand; and rocks, large -----	37	260	Clay, yellow -----	31	499
Sand; clay; and gravel, coarse -----	48	308	Sand, cemented -----	1	500
Sand, cemented -----	3	311	Sand, coarse -----	7	507
Sand, clay, and gravel -----	19	330	Clay, yellow -----	15	522
Sand, cemented; and gravel, large -----	12	342	Sand, clay, and gravel -----	19	541

Thickness Depth (feet) (feet)		Thickness Depth (feet) (feet)	
----------------------------------	--	----------------------------------	--

5N/15E-4X1. Drilled by L. A. Clampitt Co. 13-inch casing
 0-296 ft, 10-inch casing 0-563 ft, 8-inch casing 535-895 ft, perforated
 400-420 ft, 440-460 ft, 480-500 ft, 520-540 ft, 563-583 ft, 600-620 ft,
 640-660 ft, 680-700 ft, 720-740 ft, 760-780 ft, 800-820 ft, 840-860 ft,
 and 880-895 ft. Altitude about 1,040 ft.

Gravel, cemented -----	260	260	Granite rock -----	120	720
Clay, gravel, and boulders -----	340	600	"Malapai" (Malpais, black hard rock) ---	175	895

5N/15E-4X2. Drilled by L. A. Clampitt Co. 12-inch casing
 0-480 ft, no casing 480-688 ft, 8-inch casing 688-888 ft, perforations
 unknown. Altitude about 1,080 ft.

Gravel, cemented -----	325	325	"Malapai" (Malpais, black hard rock) ---	43	888
Granite rock -----	510	835			
Clay, black -----	10	845			

6N/11E-10F1. Altitude about 1,400 ft.

Sand, gravel, and boulders -----	95	95
Clay and boulders -----	40	135
Gravel, sand, and boulders, cemented -----	130	265
Sand, gravel, and granite boulders -----	68	333
Decomposed granite with hard strata -----	37	370
Decomposed granite, thin hard strata -----	61	431
Decomposed granite of varying degrees of hardness and thin, hard strata -----	232	663
Solid granite -----	18	681

6N/11E-30X1. Drilled by L. A. Clampitt Co. 10-inch casing
 0-160 ft, 8-inch casing 155-571 ft, 6-inch casing 565-1,000 ft,
 perforations unknown. Altitude about 789 ft.

Sand and gravel, cemented -----	805	805
Granite -----	195	1,000

APPENDIX E

TABLE 5. CROSS INDEX OF PUBLISHED WELL LOGS



Table 5.--Cross index of published well logs

MWD Metropolitan Water District of Southern California

Publication: a Ver Planck (1958); b Bassett and others (1959);

c Gale (1951)

State well No.	MWD No.	Publica- tion	Page No.	State well No.	MWD No.	Publica- tion	Page No.
1N/18E- 2C1	4	(a)	137	1N/18E-23B2	9	(a)	137
2E1	5	(a)	137	23B3	11	(a)	137
3B1	3	(a)	137	23B4	12	(a)	137
3E1	19	(a)	138	23K1	2	(a)	126
4A1	16	(a)	138	23P1	1	(a)	126
4A2	17	(a)	138	23R1	6	(a)	136
4B1	2	(a)	137	24J1	4	(a)	136
4B2	14	(a)	138	25B1	5	(a)	136
4B3	27	(a)	139				
4C1	28	(a)	139	2N/17E-15J1	1 and		
4D1	1	(a)	137		B-3	(a)	126
4D2	29	(a)	139	15L1	39	(a)	130
4D3	30	(a)	139	15M1	37	(a)	130
4F1	24	(a)	139	15M2	38	(a)	130
4F2	26	(a)	139	15Q1	41	(a)	130
4G1	21	(a)	139	15Q2	40	(a)	130
4G2	25	(a)	139	15R1	2	(a)	126
4H1	13	(a)	138	17B1	23	(a)	128
4H2	15	(a)	138	17B2	22	(a)	128
4H3	18	(a)	138	17G1	24	(a)	129
4J1	20	(a)	138	17H1	21	(a)	128
4K1	22	(a)	139	17J1	20	(a)	128
4Q1	23	(a)	139	17K1	25	(a)	129
10D1	10	(a)	138	17K2	27	(a)	129
10D2	11	(a)	138	17R1	19	(a)	128
10D3	12	(a)	138	17R2	26	(a)	129
10L1	7	(a)	137	20A1	28	(a)	129
10L2	8	(a)	138	21D1	18	(a)	128
10P1	9	(a)	138	21D2	29	(a)	129
13B1	1	(a)	136	21D3	17	(a)	128
13J1	2	(a)	136	21E1	30	(a)	129
13Q1	3	(a)	136	21F1	31	(a)	129
15C1	6	(a)	136	21J1	33	(a)	130
22B1	4	(a)	126	21K1	32	(a)	130
22K1	3	(a)	126	22M1	34	(a)	130
22Q1	8	(a)	137	22P1	35	(a)	130
23A1	10	(a)	137	22Q1	36	(a)	130
23B1	7	(a)	136	23A1	4	(a)	126

State well No.	MWD No.	Publica- tion	Page No.	State well No.	MWD No.	Publica- tion	Page No.
2N/17E-23A2	5	(a)	126	2N/18E-29R4	32	(a)	133
23A3	6	(a)	126	30K1	2	(a)	131
23A4	8	(a)	127	30Q1	3	(a)	131
23A5	7	(a)	127	32A1	21	(a)	132
23B1	9	(a)	127	32A2	22	(a)	132
23C1	3	(a)	126	32A3	28	(a)	133
23C2	10	(a)	127	32A4	37	(a)	134
23F1	11	(a)	127	32B1	29	(a)	133
23G1	12	(a)	127	32B2	35	(a)	133
23H1	13	(a)	127	32B3	36	(a)	134
23J1	14	(a)	127	32G1	38	(a)	134
23K1	15	(a)	128	32H1	18	(a)	132
23L1	16	(a)	128	32H2	19	(a)	132
				32N1	4	(a)	131
2N/18E-19Z1		(b)	126	32P2	39	(a)	134
27M1	59			32R1	11	(a)	131
27R1	60	(a)	136	33C1	14	(a)	132
28M1	58	(a)	135	33D1	16	(a)	132
28N1	25	(a)	133	33D2	20	(a)	132
28R1	64	(a)	136	33D3	23	(a)	132
29A1	57	(a)	135	33D4	24	(a)	133
29C1	54	(a)	135	33E1	9	(a)	131
29C2	56	(a)	135	33E2	17	(a)	132
29D1	1	(a)	130	33F1	8	(a)	131
29E1	55	(a)	135	33F2	15	(a)	132
29F1	52	(a)	135	33L1	6	(a)	131
29G1	53	(a)	135	33L2	7	(a)	131
29K1	43	(a)	134	33L3	13	(a)	132
29K2	45	(a)	134	33M1	10	(a)	131
29L1	44	(a)	134	33N1	12	(a)	131
29M1	50	(a)	135	33P1	5	(a)	131
29M2	51	(a)	135	34B1	63	(a)	136
29N1	48	(a)	135	34G1	62	(a)	136
29N2	49	(a)	135	34H1	61	(a)	136
29P1	46	(a)	134	34R1		(b)	135
29P2	47	(a)	134				
29Q1	30	(a)	133	3N/15E-32Z1		(b)	120
29Q2	33	(a)	133				
29Q3	34	(a)	133	4N/12E- 3Z1		(b)	112
29Q4	40	(a)	134	9C1	4	(c)	13
29Q5	41	(a)	134	9D1	3	(c)	12
29Q6	42	(a)	134	9H1	5	(c)	14
29R1	26	(a)	133	13A1	10	(c)	16
29R2	27	(a)	133	13D1	11	(c)	16
29R3	31	(a)	133				

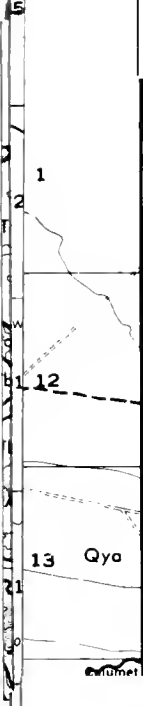
State well No.	MWD No.	Publica- tion	Page No.	State well No.	MWD No.	Publica- tion	Page No.
4N/13E- 5D1	7	(c)	15	5N/12E-16N1	16	(c)	19
5N1	8	(c)	15	16R1	17	(c)	20
17D1	9	(c)	15	26D1	18	(c)	20
				26R1	19	(c)	21
5N/11E-25Q1	2	(c)	11	34Z1		(b)	Plate 4
25R1	1	(c)	11	36D1	12	(c)	17
36F1	15	(c)	19				
36H1	13	(c)	18	5N/13E-29N1	6	(c)	14
36R1	14	(c)	18				



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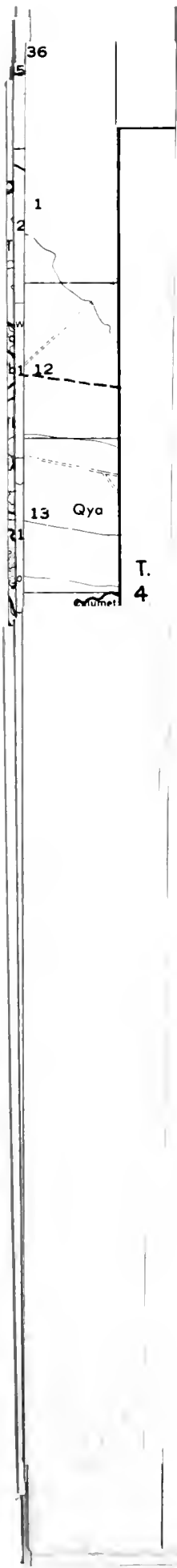
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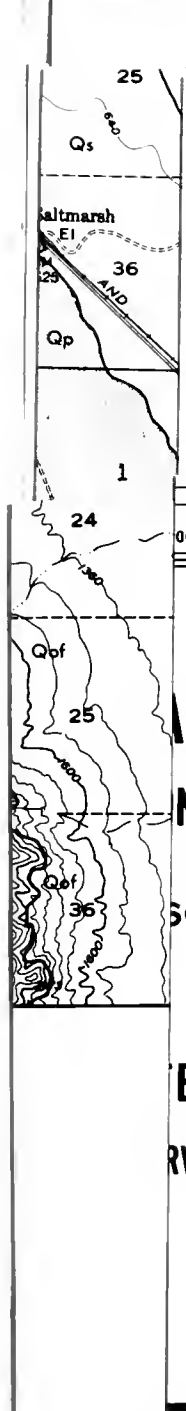






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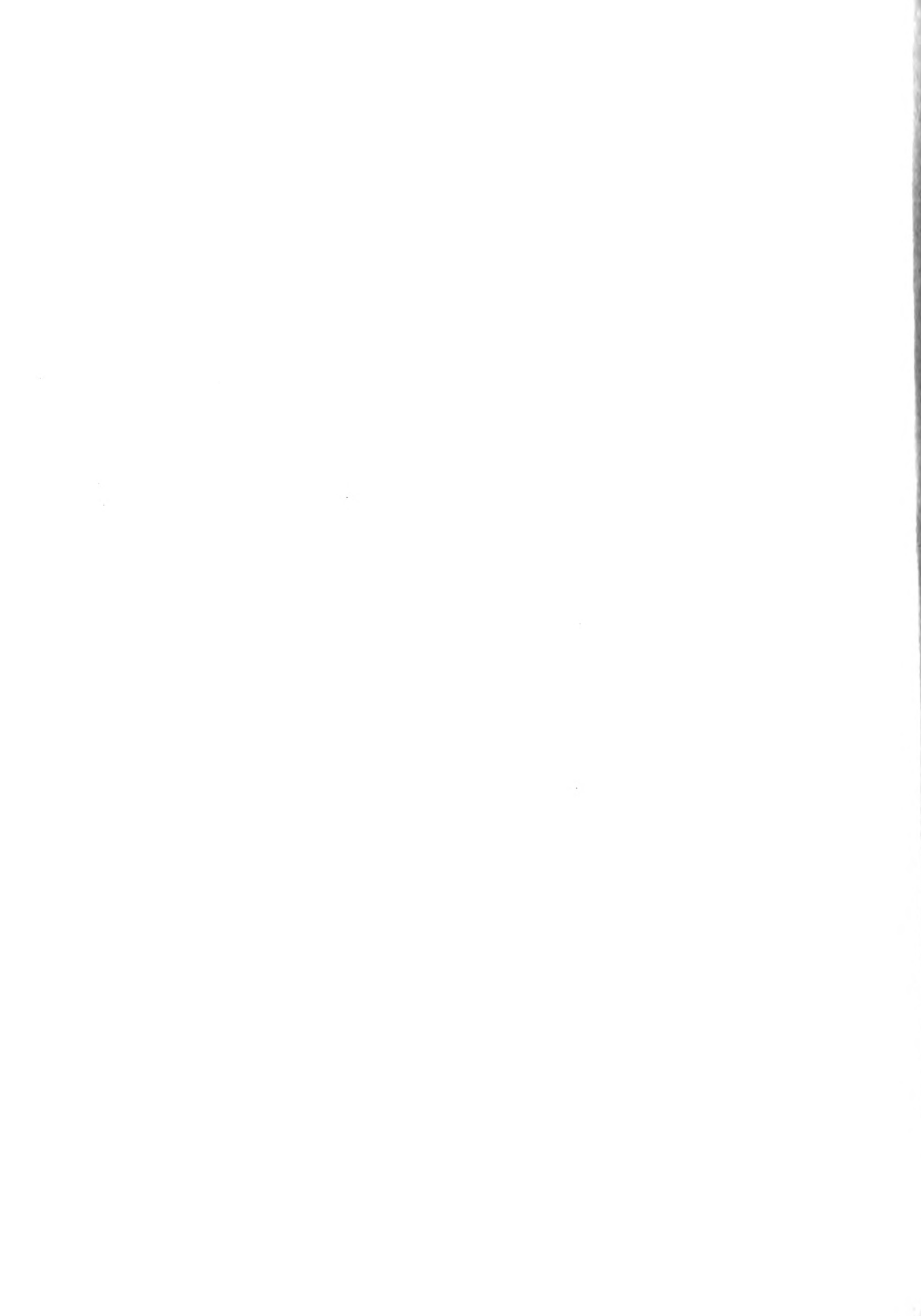
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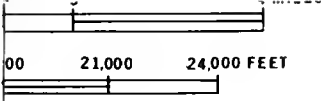
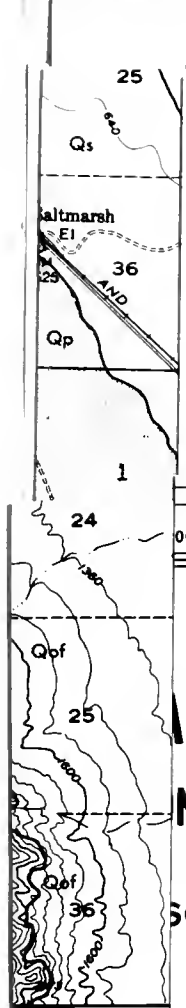
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